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# AMERICAN FRUIT GROWER

Vol. XL  
No. 7



JULY, 1920



Ten Cents  
A Copy



*Edited by Samuel Adams*

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# Fruit Trees Are Scarce

**250,000**

## Apple Tree Buyer Selects Stark Trees!

Last year a big New Jersey corporation planning to plant 250,000 apple trees of the highest quality sent its Superintendent on a tour of inspection of the fruit tree nurseries of the United States.

He kept his mission secret. Told nothing about the big order he had "up his sleeve."

After visiting most of the nurseries and fruit tree propagating grounds, he came to us. The minute he saw the splendid young apple trees in our Ozark Mountain propagating grounds, he immediately decided to order only Stark Apple Trees. He used 30,000—all Stark Trees—last year, and liked them so well, that this year he has placed his order with us for 43,000 more Stark Trees—and gave us this order in March—eight months before he wanted the trees shipped!

Profit by his example.

## We Advise Ordering **AT ONCE**

This is the first time in our history that we have issued an announcement at this time of the year. Our interest in the thousands of fruit growers who will want to plant trees this year impels us to warn them that fruit trees, especially the best varieties, are going to be very scarce this year. The man intending to plant a few or several thousand fruit trees (especially apples) should place his orders *very early* this year. He had better place his order **NOW!**

## World Shortage of Apple Seedlings

France has always been America's chief source of apple seedlings. From 1914 until the spring of 1919 war-torn France produced very few apple seedlings. In a few sections of the United States, in our propagating grounds in Kansas and in our branch nurseries, we here in America have done our best to make up for the world-wide shortage of apple seedlings. But—the shortage still exists—and but for the fact that

## Major Stark Was First to Contract for French Apple Seedlings

soon after the Armistice was signed, we would be in no better position than many other nurseries.

When Major Lloyd C. Stark came back from France with his regiment, he had in his pocket contracts for huge blocks of French seedlings. Due to his foresight, we

are in a better position to supply our loyal friends and customers than any other fruit tree nursery in the world. However, the shortage elsewhere has created and intensified the tremendous demand for Stark Trees. Ample as our stock of trees will be, we advise you to place reservation orders *at once*.

## Reasonable Prices and Highest Quality

Stark Trees, nationally known for superior quality, are this year offered at very reasonable prices compared to others.

The Annual Report of the Vermont Horticultural Society states these facts, which are well to bear in mind when you buy fruit trees:—

"Cultivation, fertilization, spraying, trimming, training, root pruning, method of digging and packing, age and size of tree and a dozen other factors influence price. Cost should always be reckoned on quality. Often a high-priced tree is cheap at its price. Often a low-priced tree is expensive even as a gift. The initial cost is, in most cases, a mere trifle when compared to the later value of the specimen as a producer of fruit or beauty. Far better estimate the nurseryman and his business methods than compare or contrast his prices with those of his competitors."

It is a Recognized Fact that in Quality, Stark Trees Stand at the Top. But now when trees are scarce and high we are selling Stark trees at reasonable prices in take care of our friends and patrons. You will be surprised at the Low Prices of genuine Stark Trees.

# STARK BRO'S NURSERIES

## Block of Stark Trees

—all apple trees—at our great propagating grounds in the Ozark Mountains. Note the fine height, splendid bodies and luxuriant foliage of these trees. This is the kind of stock we can furnish you—**IF YOU PLACE RESERVATION ORDER QUICK.**



## Largest in the World—Oldest in America

We Are Ready to Supply Big Fruit Tree Buyers

Est. in  
**1816**

—and the man who wants just a few trees, if you protect yourself by writing us at once for latest price list—and then, by placing your reservation order at once, we will ship the trees whenever you direct—and protect you against disappointment. Dispute the shortage we hold our trees at Reasonable Prices. We feel that that is our duty toward the orchard-

ists, who, by their patronage, have helped us make this the Largest Nursery in the World, to hold prices as low as possible. Even our famous Stark Delicious and Stark's Golden Delicious Apple trees and our famous Peach, Pear, Plum, Cherry trees and Berry bushes are priced with the idea of encouraging greater orchard planting in America.

## But—Act Quick!—Write for New Price List

Don't wait until the usual time of ordering fruit trees. Get busy now. That is the sure way of being sure that you will get the right kind of trees when you need them. Our nursery, and others turned down thousands of orders last season. Don't you be disappointed this year—**ORDER NOW.**

Address Box 89

## Stark Bro's Nurseries

The Only Stark Nursery in existence  
at LOUISIANA, MO., Since 1816

## Stark Delicious Trees Loaded With Top-Price Apples

Here is an astonishing demonstration of bearing ability of Stark Delicious even on poor, rocky land! Mr. Horace Rainey, owner of this Maury County, Tenn., orchard writes: "I got enough from this one crop alone from these 15-year-old Stark Delicious to pay for the trees, the land and for all my labor. The fruit was far above the average in size and color and sold readily at a fancy price. I gathered 25 bushels or more from many of these trees. Not one limb was broken although they bent to the ground."

**Stark  
Bro's  
Nurseries  
Box 89  
Louisiana, Mo.**

Send me your new 1920 Fruit Tree Price List at once. Make me your lowest price on the enclosed list of apple, peach and other trees, bushes, vines or ornamentals.

Name \_\_\_\_\_

St. or R. R. No. \_\_\_\_\_

Post Office \_\_\_\_\_

State \_\_\_\_\_

**STARK  
TREES**



# Alone

## in the tire field

56 PER CENT of all the seven and one-half million motor cars in America are registered in towns of less than five thousand population. And more than three-quarters of these are owned by farmers. Of course the great majority are in the light-car class.

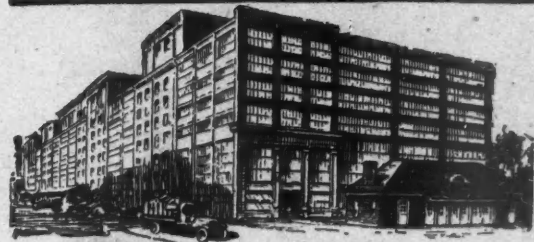
To give these millions of light-car users the right tire service was a task made to order for the Firestone Organization. It had pioneered before—it could do it again. The result is the Firestone 3½—the destined measure of service in the small tire field.

*What the bulk of the people accept as the standard of value is right. And the popular voice is calling for this Firestone 3½.*

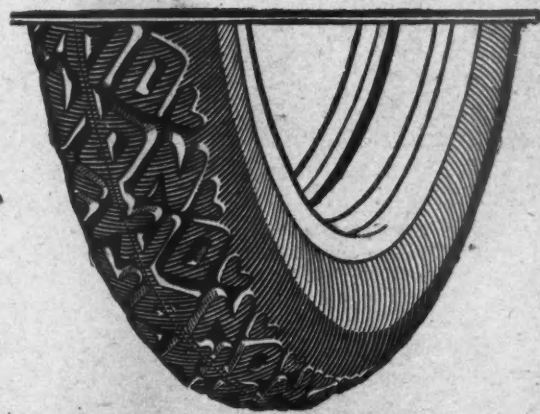
The method of building this tire is as unique as the service it renders. A \$7,000,000 factory in which only the 3-inch and 3½-inch sizes are made. Plant capacity of 16,000 tires a day. Men devoted to its making as single-mindedly as if there were no other tire in the world.

You owners of small cars can forget tire details. You need not bother with methods, features or guarantees. Call for the Firestone 3½.

*Alone in its field, the Firestone 3½ takes its place beside the half dozen products of universal use which manufacturing genius has made standard.*

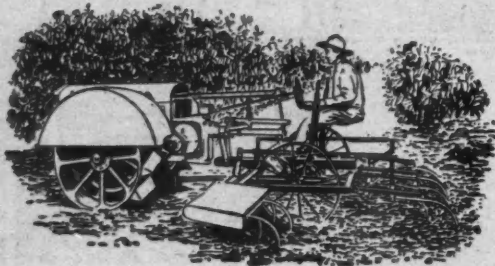


The Seven-Million-Dollar Plant—Firestone Plant No. 2—in which is built the famous Firestone 3½-inch tire, the first tire ever given a whole factory to itself. Capacity 16,000 a day.

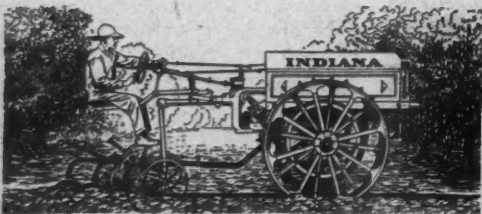


# Firestone 3½

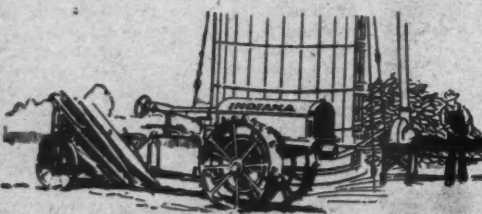




In the Orchard



Orchard Gang Plow



Doing Belt Work

**INDIANA**  
ALL-ROUND  
**TRACTOR**  
*"The World's Tractor"*

**W**HEN you sell two teams and put the money into an Indiana Tractor you cut down the time you have to spend doing chores and raising feed for horses. You quit working a month or two a year for your horses and work all the time for yourself.

Horses in excess of one team for hauling and odd jobs can be used on most farms only 90 to 100 days during the crop season. But the high cost and trouble of keeping them runs on through the winter.

The Indiana Tractor will do the work of four horses and do everything that they do. Plowing is only 15 per cent of what a tractor must do to replace horses. The Indiana plows more than two teams, and is light enough to go on the ground any time horses should.

It attaches to all makes of harrows, discs, planters, one and two row cultivators, mowers, binders, corn binders, rollers, drills, cultipackers, potato diggers, and all orchard and vineyard tools.

The regular implements you already have are the only practical size and type for row cultivation. The Indiana Tractor will use them with inexpensive hitches. In many operations it will replace six or eight horses. The driver rides the implement and has his work in front of him. The Indiana is the all-round, single unit, one-man tractor.

H. P. Purviance of Logan County, Ill., says: "My Indiana Tractor certainly is a success with the grain binder or anything

else one can do with four horses. Used it on double tandem 7 ft. disc, also on double corrugated roller and Nisco manure spreader. I like it better to cut grain than horses, for heat and flies do not bother it and the power is more steady. It stays on top in low spots better than horses."

An Indiana will work every day and the money you can get for four horses and the cost of keeping them a year will more than pay for it. Some owners do not have a horse on their places.

Clayton McFarland, Tippecanoe County, Ind., says: "My corn is equal to any corn in the community and I cultivated it entirely with my tractor. I can plow 20 acres of corn a day with a two row cultivator. I can turn at the ends and break less corn than with a team. I harvested both wheat and oats myself with no trouble from the tractor."

Many owners report cutting grain of all kinds at a fuel and oil cost of 10 to 12 cents an acre.

You can get an Indiana promptly from any of our branches, get rid of four horses, and do two men's work yourself. In the last four years this tractor has made hundreds of enthusiastic farmer friends, who help us sell more Indianas.

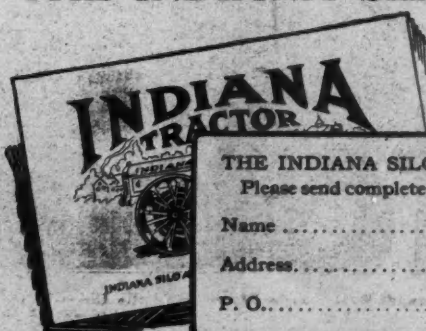
For 20 years the Indiana Silo and Tractor Company has been known for high quality products and fair dealing. Ask any of the 75,000 owners of the Indiana Silo.

Mail coupon for book of pictures showing the Indiana doing all the work horses do, and book of letters from users. If you need a silo, we have one for you. We are the largest silo manufacturers in the world.

**DEALERS:** This tractor can be used more on more farms than any other. It's the biggest dealer proposition in the field.

**THE INDIANA SILO & TRACTOR COMPANY**

14 Union Building..... Anderson, Indiana  
14 Indiana Building..... Des Moines, Iowa  
14 Silo Building..... No. Kansas City, Mo.  
14 Live Stock Exchange Building.... Indiana Silo Company of Texas, Fort Worth, Texas



THE INDIANA SILO & TRACTOR CO.

Please send complete descriptive matter on the Indiana Tractor, and letters from users.

Name .....

Address .....

P. O. ....

State .....





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Vol. XL

JULY, 1920

No. 7

## Why California Is Building Fruit Evaporators

By Arthur W. Christie, California

THERE are three principal methods of food preservation: canning, drying and cold storage. Drying is much the oldest of these methods, having been widely practiced since earliest times, while canning and cold storage are modern arts of relatively recent development. Despite the competition offered by canned and refrigerated products, dried foods still maintain an important place in the world's food supply. In addition to affording the maximum food value per dollar, dried foods are in general more economical in labor and materials necessary for their production and transportation.

California dried fruits have acquired a well deserved fame throughout the world. California dried peaches, pears, apricots, prunes, apples and raisins are known and appreciated in many lands besides our own. These products are the result of the old established process of sundrying. Many well-known trade names, such as "Sun-Maid" raisins and "Sun-Sweet" prunes and apricots call attention to the fact that these products are cured by nature in sunny California. Why then should California be interested in driers, evaporators, dehydrators, or whatever you choose to call them? Has the sun ceased to shine in California? Not so, yet why should the sun-worshippers seek artificial means for curing their fruits? Let us inquire into the reasons for the present phenomenal activity in evaporators in California.

### Rain Spoiled the Prunes

In the month of September, 1918, at the height of the prune drying season, the usually salubrious California climate forgot itself and several inches of rain soaked the hundreds of acres of prune trays. Before the sun succeeded in driving the rain clouds away, millions of dollars of prunes fermented or became moldy and represented an absolute loss. If we agree that fire insurance is a desirable protection for our homes, then why not have "rain damage insurance" for our dried fruit crops? What better form of insurance could we have than an evaporator where a rapid drying atmosphere prevails 24 hours a day in all kinds of weather? At present prices for dried fruits, the loss of only one season's crop would pay for a suitable evaporator many times over.

It is a well known fact that fruits increase considerably in sugar content just prior to the "dead ripe" stage. Growers who depend on sundrying often pick their fruits before the maximum sugar percentage has developed in order that drying may be completed before possible unfavorable weather sets in. Here again the evaporator owner can secure increased yields and better quality by allowing his crop to reach full maturity.

Bearing orchards that were formerly valued at a few hundred dollars an acre are now quoted at figures reading in the thousands. Why then allow part of this valuable land to lie idle most of the year in order to furnish dry yard space for a few short

weeks? An average prune orchard of 50 acres will require at least two acres of clear land for sundrying, whereas an evaporator to handle the same crop need not occupy over an eighth of an acre, thereby releasing 1% or 94 per cent of the dry yard for production of fruit.

### Economy of Evaporator

Assuming that this 50-acre prune orchard yields five tons of fresh fruit per acre, it will require at least 2,500 3x8-foot trays to dry the crop of 250 tons in the sun. These 2,500 trays cost today about \$3,750. Suppose we have an evaporator which will dry from six to eight tons of green prunes in 24 hours. This evaporator will handle the entire crop in a season of 30 to 40 days. Since the evaporator trays are used once every 24 hours, we will require only 150 to 400 trays, depending on whether they are 3x8-foot or 3x3-foot. The cost of these

trays will vary from \$250 to \$600, depending on the size and style of tray used. The evaporator has effected an economy in tray investment of \$3,000 to \$3,500, which is sufficient to pay for the construction of an evaporator of this capacity, exclusive of dipping outfit, tracks, cars, and other equipment which would be the same as for sundrying.

Fruit exposed to the sun for drying often becomes very dirty and dusty and contaminated with insect eggs. In order to improve its appearance as well as to sterilize the dried product, it is necessary to process the dried fruit by steam or boiling dips, before it can be packed. Evaporated fruits come from the evaporator clean and sterile and may be packed directly without processing.

Some enthusiastic evaporator manufacturers claim that evaporators give greater yields than would be obtained

from the same fruit if sundried. Considered on a basis of food value or sugar content, investigations reveal no difference, but when the moisture content of the dried fruit is taken into account, a higher moisture content explains the greater yield of evaporated fruit in some cases. Owing to the difficulty of exactly controlling drying in the sun, fruit often becomes over-dry, that is, its moisture content is reduced to a point considerably lower than necessary to prevent spoilage. On the other hand, evaporated fruit may be removed from the evaporator at any desired moisture content and thereby obtain the highest yield compatible with good keeping quality. Since dried fruits are sold by weight irrespective of moisture content within reasonable limits, it is obviously "good business" to sell as much water with your dried fruit as permissible.

### Evaporated Fruits Superior

Much has been said about the superior quality of "dehydrated" fruits. Certain firms by means of special packages and clever advertising have secured prices for evaporated or dehydrated fruits much higher than for the sundried article. So far, however, most of the common sundried fruits have not suffered serious competition. Instances are on record where evaporated prunes of superior flavor and texture brought somewhat higher prices than sundried prunes from the same orchard. Satisfactory dried apples can only be produced in evaporators. Much of the wine grape crop of California is being dried to make "black raisins." It has been conclusively shown that evaporated wine grapes are superior in color and flavor and command a higher price. Evaporated apricots, peaches and pears of highest quality have already been produced in considerable quantity.

Having considered the possible arguments in favor of evaporators, we must next consider the relative costs of producing dried fruits by the two methods. In no well designed evaporator should the labor costs be greater than sundrying and in many instances sundrying will show a greater labor cost owing to the greater handling of trays in spreading and stacking in the sun. We have only left then to consider the cost of fuel and of power if any is used. Modern evaporators show such high fuel efficiency that fuel costs as low as \$1 per green ton are not uncommon. Power costs for operation of fans, burners, etc., are practically negligible if cheap electricity is available. Even if steam or gas engines are used the power cost will not exceed the fuel cost. Fuel and power then represent the only increase in cost over sundrying. However, many experienced growers feel that this slight increase is greatly overbalanced when one considers the insurance against weather conditions, the economy of land and trays needed, the control of moisture content and cleanliness of product, superior quality and price, etc.

During the past two years many evaporators have been constructed and



A Truck Load of Grapes Ready to be Moved Into the University's Evaporator



at the present time many are being erected to care for this year's fruit crops. Quite a few of the evaporators built before this year have been total or partial failures for the simple reason that their designers did not understand the fundamentals of fruit evaporation. These failures resulted in a skepticism on the part of the growers which must be overcome by the manufacturers of successful evaporators. Unfortunately, some of the manufacturers exaggerated claims for their particular equipment. The length of drying time as well as the cost of drying is often stated to be much less than is obtained in actual operation. One finds almost as much variety in evaporators as in tractors or trucks. Hundreds of patents covering evaporators are recorded in Washington, D. C. To the average person, many of these patented evaporators are so similar as to reveal no differences of importance. A perusal of these patents convinces one that beyond preventing the erection of an exact duplicate, their value is questionable.

#### Some Requirements

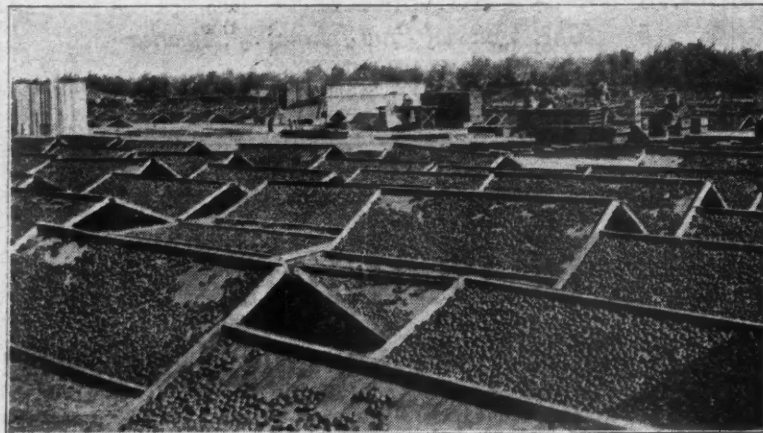
It is impossible in the space of this paper to describe the many different types of evaporators or to explain their respective advantages and disadvantages. We may, however, indicate the essential requirements for a successful evaporator as follows: 1. Economic operation, regarding labor, fuel, and power; 2. Reasonable rapid drying, without injury to quality; 3. Uniform drying and quality of product; 4. Absence of fire risk; no grower should even purchase or erect an evaporator without seeing an exactly similar evaporator operating successfully on a full charge of fruit.

The two outstanding features in re-

cent evaporator design are: 1. The recirculation of the air used in drying; 2. The direct use of gases of combustion in drying. Recirculation of the air used in drying is possible only in evaporators using a rapid flow of air produced by fans. Recirculation of the bulk of the exhaust air causes a 50 per cent reduction in fuel consump-

have allowed the products of combustion of such fuels to pass directly through the drying fruit, thus maintaining the highest possible fuel efficiency since no heat is lost through a smokestack as in the usual forms of evaporators using a radiating furnace and flues.

The Division of Fruit Products of



A Drying Yard of a Type Long Popular, But Giving Way to the Evaporator

tion because the heat in the warm exhaust air is not allowed to entirely escape. Recirculation also permits careful control of the humidity of the air used in drying which in turn prevents case hardening and overdrying. Certain fuels, such as natural gas, kerosene and stove distillate, if proper burners and furnaces are used, may be made to burn completely without soot or odor. Several evaporators

the University of California Agricultural Experiment Station, Berkeley, Cal., has for several years been investigating the drying of fruits and vegetables in evaporators. These investigations have been recently intensified by the overwhelming demand for information on this subject. The work of this division on evaporation may be summarized as follows:

1. The study, by means of small

scale laboratory experiments of the fundamental principles of artificial drying as well as a study of methods of treatment of fruit prior as well as subsequent to drying.

2. The construction and operation of a commercial size evaporator for the practical solution and demonstration of evaporation problems.

3. The accumulation of comparative data by means of careful tests on all types of evaporators in operation.

The Division of Fruit Products successfully built and operated in 1919 a commercial size evaporator on the University Farm at Davis, Cal. This is an air blast tunnel evaporator of the latest approved type and holds six tons of green fruit. The construction of this evaporator permits careful regulation of temperature and humidity; it is economical in its fuel and labor requirements, will dry rapidly and uniformly any fruit or vegetable, does not infringe on patent rights, and can be built by local mechanics at minimum expense. Plans and specifications for this evaporator can be secured free of charge from the Division of Fruit Products, Agricultural Experiment Station, Berkeley, Cal.

The University Farm evaporator at Davis, Cal., will be operated during the coming season on all kinds of fruits. Three other evaporators, one a radically different air blast evaporator and two different types of natural draft evaporators, will also be in operation at the same place for comparative purposes. All interested persons are cordially invited to visit the University Farm at Davis, Cal., during the coming season and see the evaporators in operation. For those who cannot avail themselves of this invitation, the results of investigations are always obtainable in bulletin form.

## Small Strawberry Field That Made Big Profit

By W. D. Gay, Iowa

**T**WELVE years ago I had my first experience in strawberry growing. The results pleased me exceedingly. I found that my two rows of berries were worth more in dollar and food than all the other 22 rows of truck. That autumn I bought a farm and paid at the rate of \$950 an acre for it. Don't get excited, for there was only one-half acre in the farm. The spring following, the whole lot was set to berries, over 25 different kinds. I bought plants of everybody that claimed he had the newest and best. I paid as high as \$1 a plant for some, and \$1 a dozen many times. Nearly all were disappointment. All were discarded after four years of varied success and failure.

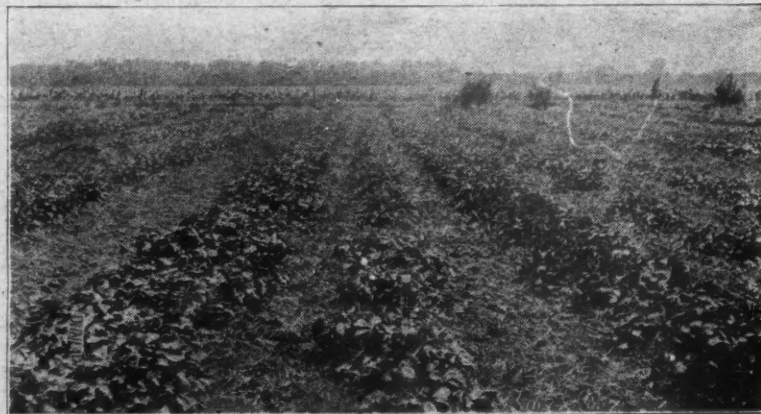
As I had sold some plants to neighbors I got a "hunch." I discovered that 95 per cent of the people who bought plants of me wanted Senator Dunlap. It also slowly dawned on me that my rows of this variety were the best in the field. Then I got another "hunch." Why not take this good old favorite and strive to improve it? This hunch stuck. It is still sticking.

#### Selecting the Mother Plant

The first thing I did was to select from my field the plant that seemed to me to produce the finest clusters under average conditions. The plant was selected first for quantity of fruit, second for beauty and quality. I also kept in mind the color, but in this respect there is little choice, as nearly all are good. This one plant was carefully removed to my big back yard and given lots of room. Three years later every plant in my field was a child of this old mother plant.

Then I commenced to get results with berries. Each season thereafter, and even now we select 25 or 30 of the best producing plants in our fields. These are carefully removed to our plant breeding ground, watered and tended like aristocrats, and made to produce the limit of new plants. The results have been wonderful. On April 1, 1918, I set out one-half acre of land to these plants, or to be exact,

18,320 square feet. I cultivated these plants myself; never had a horse plow in the field. That summer it never rained enough from May 22 to October 27 to wet the soil three inches deep. Hot? I guess it was hot. Nearly every day through July and August it was awfully hot, but I never quit cultivating. Every evening after 6 p. m. when we looked up the store found me doing something in the field with a hoe or rake.



This Is the Little Field That Made the Big Yield, and Promises to Repeat

In October the rain came, and the plants drank deep and took new life. They made large crowns, and for 30 days they grew fat. Then came the winter, and they went to sleep. I had planted them in rows four feet apart with plants 14 to 16 inches apart in the rows. They were never allowed to make a matted row more than one foot wide. Every single plant that got over the dead line got its head chopped off as soon as discovered. It was this method that saved my plants and made the big crop in 1919.

The idle ground between the rows held a reserve of moisture to feed the plants. This field looked very beautiful in the late autumn, all brilliant green, straight rows and not a weed in sight. Then in early December we hauled in several loads of coarse manure from a horse barn. This was put between the rows, but not on the plants. I put it thick, four inches deep or more. When the ground was well frozen and the rain and weather

had washed out this manure somewhat, I took a rake and raked some of the coarsest over the rows, just enough to barely cover them but not heavy enough to smother.

When April, 1919, came along this field was very beautiful in foliage, strong, vigorous, luxuriant. When the bloom came the sight was simply marvelous and when the berries commenced to ripen there seemed to be so many that we were bewildered. It seemed like we could never pick them. The rows were two feet wide, instead of one. The litter between the rows

had turned to straw, bleached by the winter rains and snows. It was clean and purified, and on this the berries laid. The mulch also kept down all weeds, furnished plant food and held moisture to feed the rows.

From this little field we picked from June 1 to 21, 249 24-quart crates. This does not include our winter supply put up in glass jars. It does not include what we gave away. These berries sold readily at \$5 to \$7 a crate. In fact we never kept a single crate overnight, and we could have sold three times as many.

#### It Was More Play Than Work

Just use your pencil and see what this half acre did for me. Consider the small amount of work. I figure that I worked an average of one hour a day for 75 or 80 days, say 80 hours, although 70 would undoubtedly be nearer right. But it is not work. It was simply play for me after working on watches, rings, clocks and such things all day, for I am a working jeweler and have sat on a watchmaker's bench for over 30 years, 21 in my present location. Repairing watches and jewelry is real work. This berry business is fun, real fun, so much so that last year I had to get another farm, a bigger one. I had to do it in order to keep busy.

Now I want to tell you what I did to my berry field after the fruit was picked, and the money in the bank. In the words of some neighbors, I just "ruined" it. At least 40 people told me that is what I was doing. In early July I sent a man, team and mow into the field and cut off all plants close to the ground. The growth was left where it fell for about a week to protect the plants from the hot sun, for it sure was hot. Then we went in with two strong horses and a 14-inch plow with a rolling cutter.

First we raked off the trash, then split each row in the middle, then came back and turned this furrow over again. When each row was "ruined" we hitched to a two-section steel harrow, put a board on it and

(Continued on page 18)



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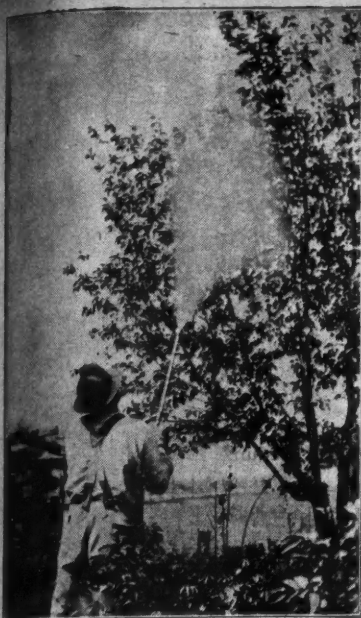
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His First Experience with a Spray Gun

UP IN Benton county, Iowa, things are doing in the orchard industry. The Benton County Farm Bureau and the county agent are helping farmers to turn the old neglected farm orchards of 20 to 50 or 60 trees from a farm liability to a farm asset. Benton county, in the heart of the Cedar River valley, is mostly a corn, hay and livestock county. Most of its farmers are stock feeders. There are only one or two orchards in the county as large as 10 acres. Fruit growing is and has been a side issue that has taken care of itself.

There are in this country approximately 2,400 farms of 40 acres or larger. At least one-half of these farms have the usual farm orchard of from 20 trees up to a hundred, of all ages, sizes and conditions of health, or otherwise. In this condition Benton county farmers were beginning to look upon them as liabilities, to be removed as soon as possible. Many indeed were being cut down to make room for other crops, apparently more easily grown.

#### Why Not Their Own Fruit?

Enter County Agent W. O. Brant some two years. His predecessor and the farm bureau were engaged in various lines requiring two, three or four years to complete. What could he do to maintain interest in the farm bureau in the meantime? He must have results in one year to convince the skeptics. He surveyed the situation. The high prices farmers were paying for apples in the fall of 1918 furnished the motive. Why couldn't Benton county farmers grow their own apples, instead of paying these high prices for apples from Missouri, Kansas and Arkansas or other large producing districts? With half as many orchards as farms, why not produce enough fruit to supply the farms of the county?

The matter was taken up with the farm bureau. The situation was thoroughly canvassed. The bureau purchased a small power sprayer consisting of engine, pump and tank mounted on skids and with sufficient hose equipment. This was loaded into an old farm wagon and that part was ready.

Next a route was mapped out. There was no trouble to find orchards to spray. The problem was to make the wisest selection and do the most possible good in educational and publicity lines. Finally a route was selected that covered a circuit of 90 miles from the time the sprayer left county agent's office until it returned. Sixteen orchards were selected in widely scattered parts of the county. They contained a total of about 700 trees, or an average of about 44 trees per orchard.

#### First Crop for Some

These orchards were sprayed three times: first, in blossom cluster or pink

# Making Farm Orchards Profitable

## What An Iowa Farm Bureau Has Done in Co-operative Spraying—By D. L. Davidson, Missouri

bud stage; second, just as the petals were dropping, and third and last time, the latter part of June. Arsenate of lead and commercial lime-sulphur solution were the insecticides used. In the first two sprays, plum and cherry trees were included, but not in the third, with a corresponding decrease in the number of trees receiving the third spray. To be sure that the work was done properly, Mr. Brant secured the services of a junior horticultural student from the state college at Ames. These sixteen orchards all produced good crops of fruit

vested. A few of these orchards produced more than sufficient for the home needs, so that the surplus sold helped in those cases to reduce the cost of spraying. At the close of the season the farm bureau sold its sprayer, and balanced its books.

From last season's work the idea of co-operative community spraying has spread all over the county. There are now organized for 1920 fifteen of these spraying rings in Benton county. The rings will average about 18 orchards, more or less depending on local conditions, and this year will spray ap-

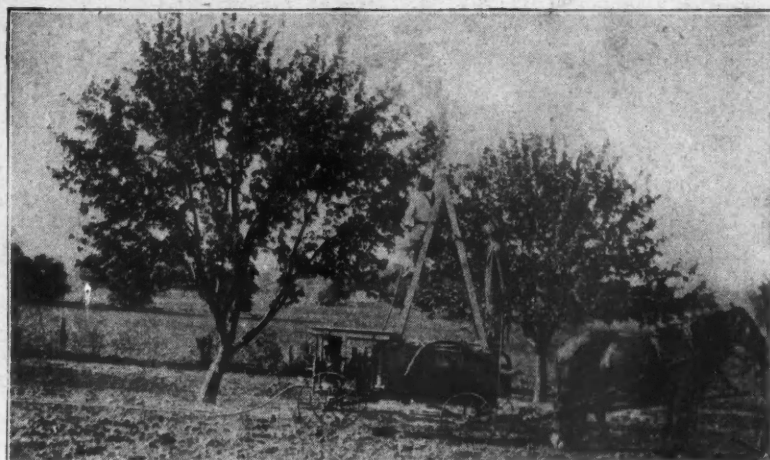
operate it, and sees that the proper spray materials are purchased and on hand at the proper time to spray. There are as many shares in the ring as there are members. The value of the shares depends on the number of shares and the cost of the sprayer. This depends on size and capacity, which also depends on the number of trees to be sprayed and the length of the circuit. Some machines are bought complete as assembled by the manufacturer. Others are what are known as incomplete outfits and are hauled around the circuit in an old farm wagon of some sort.

Mr. Brant told me that if he had the time he could organize 10 or 15 more rings and then not accommodate all the orchards that would be offered. These 14 rings this year will spray between 8,000 and 10,000 trees in Benton county. These are all of bearing age. On the basis of last year's returns, these 15 rings from present indications will produce about \$75,000 worth of fruit, where practically none has been produced in the past.

County agents in other Iowa counties seeing what Mr. Brant did last year and is doing this year in Benton county, are spreading the gospel of the co-operative community spraying ring. The disease has taken hold already and several other counties in that part of the state will begin producing their own farm fruit. The idea is being boosted by the department of horticulture and the extension department of the state college at Ames.

A number of school boys near Woodbine, in the western part of the state, last spring organized a boys' spraying club. The work was directed by Mr. Nichols of the extension department. At the state fair and also the Midwest Horticultural Exposition, they won a goodly lot of prizes in competition with experienced growers. At the Midwest show next winter we expect to see keen competition between these various spraying rings for the best display of fruit, the cheapest operating costs in proportion to gross return and a lot more valuable data brought out.

There are thousands of trees throughout all the middle western



Spraying One of the Benton County Farm Orchards with a Power Sprayer

free from worms, and very little fungous disease. It was the first crop many of them had ever borne.

The cost for labor and materials was borne by the various owners in proportion to the time and material used in each orchard. The sprayer belonged to the farm bureau. When the accounts were balanced at the end of the season, the average cost for material and labor was \$23 per orchard. A record was kept in each orchard of the amount of merchantable fruit harvested, and its market value in the local market. The average market value of the fruit from these 16 orchards was \$230, or gross return of 10 for one on the money in-

proximately 14,000 trees, or in the neighborhood of 900 trees in each ring.

#### How Rings Are Organized

These rings are organized under the direction of the county agent, along the lines of the threshing rings that have operated so successfully in that section.

The members of each ring elect a president, vice-president and secretary-treasurer, these three forming the executive committee, which directs and controls the business policy of the organization. The secretary-treasurer is the business manager. He looks after the sprayer, sees that it is kept in proper condition, hires a man to

## Breeding New Strawberries

By Wm. M. Freeman, Idaho

ABOUT 10 years ago I began setting varieties of everbearing strawberries, buying the Superb from Mr. Farmer at \$5 a dozen, Autumn, Productive and Pan American at \$2.50 a dozen. Later I secured other kinds including Francis, Americus, Progressive and various seedlings from Mr. Gardner of Iowa, whom it is said, would become so enthusiastic when propagating them that he would forget to go to dinner. Everbearing varieties at that time were entirely new, having been discovered by Samuel Cooper the year of the Pan-American Exposition.

It should be mentioned that all the everbearing varieties have come from the Pan-American. Mr. Cooper's original variety. About the time I got fairly started I read in the Fruit Grower of St. Joseph, Mo., a letter from Albert F. Etter describing a new race of strawberries bred up notably from the wild beach strawberry, which is native of the Pacific coast from Alaska to Patagonia. I got into communication with Mr. Etter and traded plants of all of my everbearing va-

rieties for plants of 17 kinds of his new race berries.

It happened that I planted them in two rows, with a row of Productive everbearing between them. It just happened that way. Productive, being a pistillate berry, could not fertilize its own bloom, therefore its seeds were crossed with all 17 of the new race berries. I lost several years by failure to get the seeds to grow.

Now there is one peculiarity about crossing everbearing with the new race. Usually you are lucky to get one variety in a thousand worth keeping. But with the new race cross, about one-half of the seedlings are fair. I have destroyed hundreds of varieties better than Progressive and have kept only three varieties of new race everbearing.

Now I shall plant a row of pistillate new race variety with new race everbearing on each side of them, plant the seeds of the middle row and watch the new wonders unfold.

To Mr. Etter, due credit should be given for producing a new race of (Continued on page 33)



Note the Unique Homemade Tower and Truck

states in a similar condition to those in Benton county. They are now a liability. A wide-awake county agent and farm bureau can make them into a most valuable asset.

Editor's Note: The work that is being done by the Benton County Farm Bureau is worthy of extensive application all over the country. Large numbers of farm orchards have been allowed to go to ruin because the owner neglected to control the pests. But by co-operating with neighbors in the purchase of a sprayer, more orchards can be sprayed, and the expense spread over a larger acreage. Every farm home should have an abundant supply of home grown fruit. Who is the next county agent to promote co-operative spraying?



# The Trend of the Times in the Northwest

By C. I. Lewis, Associate Editor

THE Pacific Northwest has a fruit industry which is now yielding \$200,000,000 annually. Probably in no part of America are there a more progressive bunch of fruit growers to be found than in this section. They have been the leaders in progressive horticulture in the United States for the past 20 years. They are a group of men who are quick to let go of the old if they see something better in the case. Close observation will show one that there are certain trends or tendencies taking place in our horticulture. I wish, at this time, to bring up a few of the problems connected with the production of fruit and how they are being solved in this Pacific Northwest country.

## Spraying

Spraying is going through an evolution, both as regards material and equipment. The introduction of Spreaders is being taken up by fruit growers quite generally. These spreaders consist of such substances as casenite, soap bark and crude oil. The presence of these substances gives a better spread to the spray mixture and will probably lead eventually to the use of weaker solutions. Already a number of tests are indicating that we are using lead arsenate stronger than is necessary. Miscible oil emulsion in most of the preliminary tests is proving to be a good spreader. What is known as California miscible oil No. 2 has been quite generally used. Two gallons to a tank are sufficient. The oil should first be diluted with small additions of water and the mixture should be stirred until a perfect emulsion is obtained. The agitator should be started and as the tank is being filled, the emulsion should be gradually poured into the tank.

There are some sections of the Pacific Northwest that have been able to keep out the codling moth entirely. British Columbia, with 40,000 acres of orchard, the greater part of which is apples, is practically free from codling moth. There are districts in the inland empire, where formerly the codling moth took a toll of 20 per cent of the crop, where the loss is now less than two per cent. Proper equipment, efficient spraying and in some cases the actual killing of the first brood of moth, which appears in the apples is being tried in some districts to good advantage.

## Powerful Outfits Used

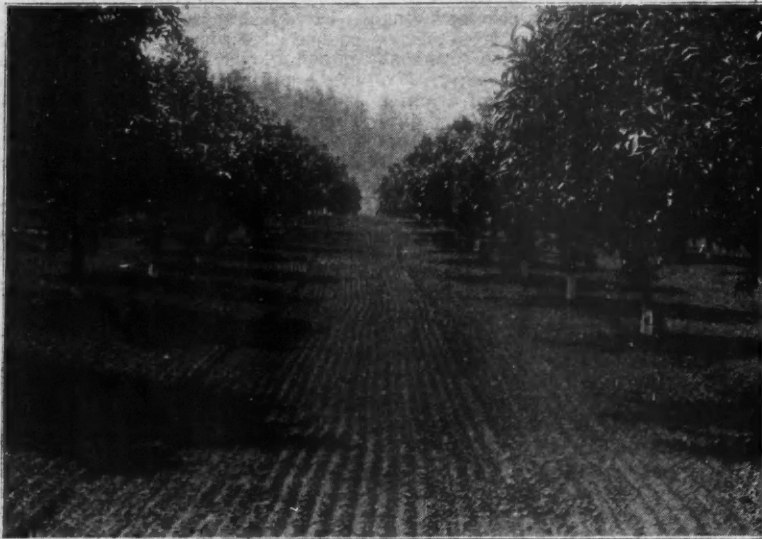
There has been an evolution in the spray equipment used in the Northwest. The war was largely responsible for these introductions. The first has been the spray gun. The spray gun has come to stay and in many an orchard is displacing the rod. However, to use spray guns efficiently high power is required. The two or three horsepower engine has no business trying to carry two spray guns; with such an outfit only one spray gun can be used at a time, while two may be carried on two leads of hose, one must be shut off while the other is being used. The spray gun is at its best when it has behind it at least ten horsepower and there is no question that nearly all of the large orchards of the Pacific Northwest, within the next two years, will be equipped with high-powered outfits supplied with spray guns. Wherever such outfits are being used more efficient spraying is the result. Fewer men and horses are required and what is perhaps even of greater import is that the work can be done much more rapidly.

The introduction of powerful machines means a smaller number of machines in the large orchard; means a fineness of spray that cannot be obtained in any other way; means the handling of large volumes of solution; means a constant high pressure which is essential. In fact if a small outfit is to give efficient results from a spray gun, a pressure of 300 pounds must be maintained.

For a number of years collar-dis-

eases are becoming more and more prevalent in the Pacific Northwest; diseases which attack, especially, the Grimes Golden, Spitzenburg, and Jonathan. These diseases come from a number of causes, such as frost injury at the ground line, girdling by mice, the presence of bacterial diseases like

that the old remedy, bichloride of mercury, will not destroy pear blight bacteria on wounds of trees, but will destroy bacteria on metal tools. He has found that cyanide of mercury will destroy the bacteria on the wounds of trees. He has been experimenting of late, and has found that a combina-



Clean Tillage Produced by Tractor and Brillion Looks Neat and Conserves Moisture

fire blight, certain fungous diseases which may be parasitic, working on the live tissue, or saprophytic, living on dead tissue. Where mice are infesting an orchard, a good supply of hogs will probably rid the orchard of this pest as quickly as anything; but with most of the diseases discussed, the remedy is practically the same in all cases. The practice followed now more and more, is first the removal of all dead tissue, removing diseased parts entirely; secondly the disinfecting of wounds.

Professor F. C. Reimer, Superintendent of the Southern Oregon Experiment Station, has demonstrated

tion of these two can be used to advantage, so that both the wounds and the cutting implements will be entirely sterilized. This mixture consists of one part by weight of cyanide of mercury and one gram of bichloride of mercury to 500 parts by weight of water. After disinfecting, various preparations are recommended as preservers, such as asphaltum, or a combination of coal tar and creosote. The writer's observation, however, lead him to conclude that such preparations, if used in large quantities, are injurious, often killing the live tissue on the edge of the wounds. We would recommend the use of nothing, or if



A View of the New Storage Plant at Medford, Oregon

## Medford Gets New Storage Plant

The Oregon Growers' Association has recently completed the erection of a packing and storage house at Medford, Ore., at a cost of \$50,000. This plant is 78 by 98 feet in size, built of tile and thoroughly insulated. The entire upper floor is one large packing room, but will eventually be converted into cold storage rooms. The lower floor has four pre-cooling and cold storage rooms. One of the modern conveniences in this building is the water power elevator and endless chain hoist which convey the fruit from the receiving room to packing or storage rooms.

Trucks unload at the south end of the building directly onto a belt. After the fruit is packed, gravity conveyors take it directly to the pre-cooling rooms or cars.

The cold storage plant is operated from the basement by a 25-ton Vulcan compressor driven by a 50 H. P. motor. There are two additional condensers in the basement, and a coil room containing four sets of coils on the upper floor. Three sides of the building are surrounded by porches 12 feet wide while on the fourth side is a large extension loading shed which can easily be converted into a packing shed. The plant is located on property consisting of 13 city blocks, and has trackage the entire length of the plant. This is sufficient to hold seven cars for loading at one time. By using an additional spur, fourteen cars can be loaded at one time. It is planned to convert the entire plant into a cold storage as soon as needed, and build a separate packing plant adjacent to it.

a preparation is employed, Bordeaux paste.

It will be wise in the future, in using such varieties as the Grimes, Spitzenburg and Jonathans, to use more resistant stock, or double work the trees. In some sections of the Northwest the Northern Spy seems to be fairly free from most of the collar diseases.

## Functional Troubles

We have had, in the Pacific Northwest, a series of unusually dry summers. Coupled with this condition we have had the hardest winter in our history. The result has been that, in some of the low lands, some trees have been actually killed; in others the trees are still alive, but many of the fruit spurs are in bad shape, in some cases likely the crop has been lost. We want to warn growers, however, that under the conditions mentioned, functional troubles can be expected. The resistance of the trees has been impaired; the vitality is low. Under such a condition so-called functional troubles flourish. Branches will die here and there, many spurs will succumb, foliage may not look normal, bark in some cases will become discolored; all indicative of subnormal condition of tree. There is no real remedy for such conditions, simply follow the best of orchard practices. Good tillage and irrigation, plenty of plant food, especially nitrogen, will help such trees. Light pruning should be resorted to, and one should avoid taking off large quantities of fairly healthy foliage as this foliage is necessary in assisting the tree to recuperate.

## Tree Feeding

The Northwest is just beginning to appreciate the value of tree feeding, and the use of manures for fertilizers are becoming much more general than formerly. Up to 1912 our orchards showed a large percentage of functional disorders, such as little leaf, rosette, dieback, fruit pit, etc. In the irrigated districts such troubles have been largely eliminated by seeding the orchards with alfalfa or clover, and by irrigating.

The use of nitrogenous fertilizers in the spring, such as nitrate of soda or sulphate of ammonia have been used to advantage. In some districts, stock yard manures have been obtained, and of late dried sheep manure, which is applied at the rate of a ton to the acre, is producing very gratifying results. Now, however, a cloud is appearing on the horizon. It is represented that much of the alfalfa and clover raised in our orchards will be useless for forage purposes; that horses are dying, being poisoned by the use of this hay, and that other stock are also in danger.

It is gratifying to know that the Washington Experiment Station has undertaken an extensive survey and investigation to determine the real facts in the case. It will be unfortunate if some system of management cannot be evolved whereby we can maintain an abundance of clover and alfalfa in our orchards, and still use this material for our stock feed.

## Orchard Tractor

While the war did a great deal for us along the lines of spraying, it has also been the inspiration for the introduction of tractors. The scarcity of help, the high price of the small amount available, has driven fruit growers to adopt machinery wherever possible. Practically all large orchards now have tractors, and a large percentage of the small orchards are rapidly introducing them. The small orchards all use cheap tractors, but the bigger orchards eventually introduce the powerful machines. There are many problems in connection with the use of the tractor that have not been worked out to the entire satisfaction of the orchardist.



# With Our Editors

## What Farm Orchards Can Do

THAT the farm orchard has a value in the production of a supply of fruit for the farm home, goes without saying, but that it has large possibilities as a revenue producer is a fact which escapes many farm owners. At least, it seems that many farmers who devote their time to general farming have blinders over their eyes when looking toward their orchard. They content themselves with the excuse that they do not have the necessary time to take care of their orchards. In other words, they believe it is all right for the other fellow, or for the owner of a large acreage of trees, but that it will not pay in a farm orchard containing just a few trees.

This is an excuse which needs to go into the discard. Time and again it has been shown by demonstration agents that there was money in the old home orchard. But it has remained for County Agent Brant of Benton county, Ia., to set his county to spraying. The spraying rings which have been formed in that county will this year spray something like 14,000 trees that have never been sprayed, and produce for the county a crop of fruit worth \$75,000. These orchards are not of a size ordinarily regarded as "commercial." But the sum total of their production amounts to a considerable item commercially, and as they have been sprayed through the co-operation of their owners, the surplus, after home cellars and storage pits have been filled, will be marketed co-operatively and at a profit that will more than cover the expenses of production.

This experience of farmers in a county which is not generally regarded as a fruit growing county, should stand out as an example of the possibilities for the farm orchard and should be followed by hundreds of other counties all over the country. The possibilities of the home orchard are unlimited, when the orchards are given the proper kind of care. Through co-operative action it is possible for all to receive the benefits of modern methods at a minimum expenditure of cash, time or know-how.

## Buy Barrels and Boxes Now

ONCE AGAIN we urge all apple growers who have not bought their barrels and boxes, to place orders for their requirements at once. An extremely critical situation faces the manufacturers of barrels, boxes and other fruit packages in the way of shortage of raw material, scarcity of labor and uncertain transportation.

Prices are higher now than the highest figure last year, but before picking time arrives, the present figures may appear low, because of the probable short supply and heavy demand. Just because your apples have only finished blossoming does not indicate that you have lots of time for ordering your packages. Now is none too early, and by ordering now it is hardly probable that your staves, hoops, headings or finished barrels, or other packages, will reach you any too early.

The present indications are that there will be a big crop of apples in the majority of commercial districts. A large crop of apples means a heavy demand for barrels and boxes, and with a scarcity of package material at the factories, those who put off

## Protective League Service

Readers of the AMERICAN FRUIT GROWER are familiar with at least some of the functions of the American Fruit Grower Protective League through the columns in each issue devoted to orchard problems and legal questions. The purpose of the League is to render distinct forms of service, which, for many reasons, cannot be conveyed through the columns of the publication itself. To our subscribers who are also members of the League, this special service takes such forms as adjustment of express, railroad and insurance claims, preparing income tax reports, assistance in the organization of co-operative marketing or buying associations, aid in the solution of difficult problems in orchard management, legal service not requiring the attention of a local attorney, and in still other ways. In other words, the purpose of the League is to enable the publication and its staff to be of maximum helpfulness to its members.

In this connection, we are pleased to announce that we have just added to the League, Mr. Roy E. Marshall, recently associated with the Virginia Agricultural College as Extension Horticulturist. Mr. Marshall brings with him a fund of knowledge relating to the growing and marketing of fruit. He has had extensive experience in this line of work, both east and west, and will be happy in his new connection to meet his many friends and to serve the members of the League.

ordering their supplies are very liable to suffer disappointment.

Order your barrels, boxes, baskets, crates or whatever kind of fruit packages you need this season, and order now. We will be very glad to assist any of our readers in finding a place to buy the packages they need.

## What a Difference It Would Make

THE high cost of living is high enough we think. An increase of 83 per cent is generally stated as covering the advance in living costs over what they were in 1914. But this increase is small as compared to the increases in European countries. Figures gathered by our consular service show that between July, 1914, and January, 1920, the cost of living in the United Kingdom increased 130 per cent, in France there was an increase of 220 per cent, in Italy 193 per cent, in Belgium 296 per cent, in Norway 201 per cent and in Germany 356 per cent.

The alleged 83 per cent increase in this country undoubtedly does not take into consideration the recent high altitude flight of sugar or potatoes. But it affords the basis of much conversation which usually starts out something like this: "Remember those good old days when sugar sold 20 pounds for \$1, coal \$4 a ton, shoes \$3.50 a pair, etc." Those were "good old days"—to look back upon. It is safe to say, however, that if we could return to things as they were 20 years ago when prices were cheap as com-

pared to present figures we would be more unhappy than now. Not only was food cheap, but everything else was in proportion. Labor-saving devices were much less plentiful, and certainly less highly improved than exists today. The automobile was in its infancy, and none but the reckless rich dared to buy a "horseless carriage," let alone riding in one. The tractor has scarcely been thought of except as a device for use on the boundless prairies of the far west. Rural telephones were few and far between, concrete highways were almost unknown; rural mail delivery was limited to but few localities; pneumatic water systems and electric lighting systems for farm homes were just beginning to replace the old well pump and the kerosene lamp.

After having learned how to enjoy the present-day modern conveniences and comforts, it is hardly probable that many persons would prefer to swap the pleasures and advantages of 1920 for what they had in 1900. But what a difference it would make to have the income of the present with the outgo of the past.

## The Oldest Fruit Society

THE AMERICAN Pomological Society is one organization that should have the membership and unstinted support of every person who is interested in fruit growing. Organized as it was in 1848, it is not only the oldest horticultural organization in the country, but it is the only national organization that is interested both directly and indirectly in the amateur fruit grower as well as the man who counts his acres in the hundreds.

"The aim of the American Pomological Society," writes President L. H. Bailey, "has always been to encourage the cultivation of fruits of all kinds, including the common orchard fruits, nuts, citrus fruits, berries, grapes, tropical fruits and others. It stands for both the amateur and commercial grower. The commercial interests are very large in North America, and they need an organization to bring them together and to look after their welfare. In the earlier days, a fruit garden was supposed to be an indispensable part of every good home place, but in recent years the amateur interests have gone largely to ornamental and architectural features. These developments are all desirable, but there should also be a conscious plan for fruit trees and bushes and vines. The American Pomological Society proposes to stimulate this amateur fruit growing interest to put a fruit garden of one kind or another on the private places all over the country. This will add much to the interest of the home, provide attractive employment for all members of the family, be a means of education, and produce useful supplies for the table."

The society has no source of revenue except from membership fees and the income of a fund of \$5,000 contributed by Marshall P. Wilder for medals. These medals are awarded to new, meritorious fruits. The purposes of the society are broad, and all it needs to enable it to serve the high purposes for which it stands is the membership of the thousands of persons who are interested in fruits and fruit growing. The secretary is Prof. E. R. Lake, Division of Pomology, U. S. Department of Agriculture, Washington, D. C.



# Orchard Problems and Their Solution

By Paul C. Stark, Associate Editor

## CHERRY TREE DOES NOT BEAR

Q.—Some 12 or 14 years ago I bought a Black Tartarian cherry tree. In due time it commenced bearing and up to three years ago it bore luxuriantly, since which time it has not borne any fruit. Last year it did not blossom at all. For two or three years previous to this it blossomed partially, but very little, if any, fruit followed, and last year as above stated it did not have any fruit on it at all. The foliage is very thick (excluding the sun to a large extent). It is on high dry ground and near a hen yard. Kindly tell me what I shall do to the tree to restore it to producing fruit again. For some three or four years it bore beautiful large cherries. Please advise me.—L. J. U., Mass.

A.—From your description of the growth of this tree and its location near the hen yard it is my opinion this tree is receiving too much nitrogenous food, and as a result, is making such a rapid and rank wood growth it is throwing it out of bearing. A fruit tree to be in good bearing condition must have a certain balance. If by too heavy feeding of any certain kind of fertilizer or the lack of any certain kind of plant food the tree is thrown out of balance, it does not bear satisfactory crops. Nitrogen is very essential to an orchard tree, but if too much is applied it will throw all of the strength of the tree to wood growth at the expense of bearing. Do not apply any kind of nitrogenous fertilizer or manure to this tree. The location of the tree near the hen yard has doubtless given it an excessive amount of nitrogen which is probably responsible for throwing the tree out of bearing.

I have never summer pruned a cherry tree but in apple trees the practice has been followed by some orchard men with considerable success. With the apple tree a moderate pruning is done about the middle of June. This tends to check the growth of the wood and throw the strength of the tree into forming fruit buds. This practice is recommended on young, very vigorous apple trees about five or six years of age, and has a tendency to throw them into bearing.

## Grape Spraying

Q.—Last fall some of the grapes on my vine did not ripen, never turned in color and had no flavor. Had a large crop on vine. Can you advise the cause and remedy? Stable manure was spaded in last spring.—F. W. T., New York.

A.—Your letter does not give very full description of the vine. I have seen a similar condition in vineyards where the vines were defoliated on account of some fungous disease or insects. As the fruit is dependent on the leaves for its development, it can be easily seen that the fruit would not mature or color properly if the foliage was badly injured or dropped off. General spraying methods of grapes includes the use of Bordeaux mixture (3-4-50) and arsenate of lead used at the rate of two or three pounds of paste to 50 gallons of Bordeaux mixture. Four or five sprayings are recommended.

## Bringing a Neglected Orchard Into Successful Bearing

Q.—We have leased an orchard of 50 acres that is in quite a rundown condition. About 1,600 trees are from 25 to 30 years of age, the remaining 400 are hardly of bearing age. Most of the trees replanted died of Illinois canker or some similar blight, and there is still considerable of this disease, especially among the Ben Davis, although from appearances quite an effort has been expended in checking it by removing diseased portions. The orchard gives a history of declining production for the past few years and we are very anxious to bring it back. The soil has not been cultivated for many years and is a tangled mass of blue grass and weeds making it nearly impossible to plow. Would you recommend placing sheep in orchard to graze this down before attempting to plow? Also, would you recommend the use of sulphate of ammonia this year? One block

Ask Questions. No matter how big or how little your orchard, you are continually meeting up with problems that you would like to get information or advice about. Let us help you solve your orchard problems, no matter what state you live in, what fruit you grow or the size of your planting. Address Paul C. Stark, AMERICAN FRUIT GROWER, Chicago, Ill.



A Load of 2,500 Quarts of Raspberries for Canning

## Truck Solves Hauling Problem

By A. H. Pulver, New York

Last year the call of the New York canneries was for more and more berries throughout the entire berry season. All forms of conveyance were used in getting the berries from the farms to the canneries, but in this the motor truck proved to be not only speedier in point of time consumed in transit, but also in size of load and condition of the fruit upon arrival at its destination. The accompanying photograph shows a load of 2,500 quarts of Columbian raspberries on a pneumatic tired motor truck headed for a Sodus, N. Y., cannery.

Missouri Pippins gives a history of producing a great quantity of fruit every year but all very small and not marketable. The Winesaps seem in healthy condition and bloom every year profusely but have produced scarcely any fruit for three seasons. The owner was an early advocate of spraying and his equipment is the best, but we are of the opinion his spray schedule has not been up to standard. The trees are chiefly Ben Davis, Jonathan, Missouri Pippins, and Winesap.—J. S. H., Nebraska.

A.—Illinois canker is very serious on the Ben Davis. From your description of the orchard, I should say the best thing you can do is to apply nitrate of soda or sulphate of ammonia, five pounds to each tree, scattering it beneath each tree as far as the branches extend. The sooner this can be applied, the better. It will be all right to plow under all of the blue grass and weeds, but this should be done as soon as possible. Do not pasture with sheep. Cultivate the ground continually this season until about the middle of July. Don't cultivate too late or it will cause the trees to produce a late growth. The Missouri Pippin tends to overbear as it gets older, but if you will fertilize as mentioned above, you ought to get some good fruit. From your description this orchard is starved, but it can be brought back. In regard to spray materials and time of application, see the spraying schedule in the April issue of AMERICAN FRUIT GROWER.

## Pruning Cherry

Q.—Is it right and proper to cut back cherry trees to two or three buds before planting? Is it advisable to spray an orchard the first season?—W. L. M., Michigan.

A.—I would not advise you to prune cherries heavily when you set them out. Most authorities agree that the less pruning on a cherry tree, the better. After you have planted the trees, all the cross limbs or broken

limbs should be removed, but don't shorten in the branches as you would apple or pear trees. Cherry trees are more difficult to transplant than some of the other fruits and some of the strongest buds are towards the ends of the branches and the tree will have a better chance of living if these strong buds are not cut off. In regard to spraying an orchard the first season, this will depend on circumstances. If your orchard is located near trees that are affected with scale insects, I would advise spraying the trees right after they are planted out, using material advised for dormant spraying. Later on in the season if any particular disease or insect shows up, it may be necessary to spray, although most young orchards are not sprayed to amount to anything until they come into bearing. Watch your trees carefully and if it seems advisable to spray them to control some pest that may show up, do so. While the trees are young a barrel sprayer will be enough even in a commercial orchard. If you have over several acres of fruit trees, it would be advisable to get a power sprayer when the trees get larger and begin to bear.

## Fruit Scars on Twig

Q.—Enclosed you will find a cutting from one of my apple trees. Kindly inform me as to what might be the cause of the sponge-like growth at the crotch, and a cure for same. I spray every year with lime-sulphur. Several of my trees are badly affected, the branches beginning to rot later on.—A. C. J., Illinois.

A.—The knot in the crotch of the twig is a condition normal to all apple trees that have reached bearing age. Two years before you cut this twig, a cluster of blossoms appeared in the position now occupied by the enlarged portion. Three of these blossoms set fruit, as is shown by the scars on the end of the swollen area, and at least one of these reached maturity. While

these fruits were growing, two lateral buds developed on the sides of the twig and the next year grew out into the twigs that now form the fork of your specimen. You will find these knots on all bearing apple trees on twigs that have produced flowers or fruit. On some varieties the knots are much larger than on others, but they are entirely normal, and do not arise from disease. The rotting of the branches you mention is another matter.—F.

## Will Peaches Come True?

Q.—I have a very fine seedling peach which withstood the hard winter of 1916-17 when two Elbertas I had were winter-killed and last summer in its fourth year bore a good three-fourth bushel of very large freestone peaches. Now, what I want to ask is this: Will it come true from seeds where there is no peach trees around for several hundred feet? When should the seeds be planted?—C. A. G., Missouri.

A.—In order to be sure of getting the same peach tree as you seedling peach, it will be necessary to grow some peach seedlings from peach pits and bud the young trees by what is known as the shield bud method. There are several varieties of peaches that are claimed to come fairly true to the seed, but they vary more or less when grown this way. The same is true of other fruits. You may plant the seed from a Jonathan apple and you will get from each seed an entirely different apple than the parent—possibly a yellow apple, or a sweet apple, etc.

Many people do not realize that every variety is nothing more than a superior seedling which has been named. If a seedling is especially fine and an improvement over other seedlings of a similar sort, with which it will compete in commercial markets, it may be worthy of propagation. However, just because a new seedling is about as good as some well known sort, it does not follow that the new seedling would be worthy of propagation, because it would have to compete with a variety which was well known and had a good start on the market and in the minds of the public. A new variety to be successful must be superior in at least one quality as compared with similar already well known sorts with which it must compete in the markets.

The fruit-growing industry, as far as list of varieties is concerned, has been almost revolutionized in the past generation, many of the old varieties being supplanted by improved sorts, yet some good old sorts, like Winesap, Grimes, Jonathan, Rome, are still popular and being planted largely.

## The Lowry Apple

Q.—Do you know anything about an apple called the Lowry? Is it any good?—C. A. S., West Virginia.

A.—I have seen the Lowry in orchards of Virginia and for that section it seems to be a very good variety. In the orchards of James Craig last summer I saw some splendid young six and seven-year-old orchards, planted largely to Lowry and Delicious. They were growing on rolling land at the foot of a mountain. The land was very rocky and had been thought by many unfit for orchards. Mr. Craig demonstrated that he could grow splendid orchards on it and that the trees would come into bearing young. Both these varieties began bearing in the fourth and fifth years—a few apples before that.

The Lowry is rather a flat apple of a dark mahogany red. I have never had any personal experience with it as a keeper, but Mr. Craig reported it as a splendid keeping variety in storage. The apple has not been planted widely in other parts of the country, but in Virginia there have been considerable plantings of it and the growers seem well pleased.





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***"Even slight jars bruise peaches—pneumatics protect them. My trucks on Goodyear Cord Tires help all my farming which is largely motorized. These trucks go through the sandy loam of the fields to feed the machines and to haul from them—solid-tired trucks cannot do this."***  
***W. W. Lowe, Farmer, Fruit Grower and Stock Raiser, Byron, Georgia***

**B**ETWEEN the lines of statements like this, one reads the narrative of a significant advance in farming methods effected with power machinery and trucks on Goodyear Cord Tires.

The labor shortage is being met on many farms by these pneumatic-tired trucks working with motorized pumping, shelling, grinding, cutting and threshing machines.

Since it usually is not practical to follow the field activities by moving such outfits along, their operation, to be fully efficient, must depend on quick cartage over soft ground.

The solid-tire is not fitted for this hauling, because it stalls in loose soil, whereas the big Goodyear Cord Tires supply the traction necessary in off-the-road hauling.

Their immense strength proceeds from that manufacturing care which, in protecting our good name, has developed the sinewy toughness of their Goodyear Cord construction.

Farmers' reports, showing how pneumatics on trucks help increase farm incomes, can be obtained by writing to The Goodyear Tire & Rubber Company, Akron, Ohio.

**GOODYEAR**  
  
**CORD TIRES**



# The Sealdsweet Fruit Grower



A section devoted to the activities of the **FLORIDA** and co-operative marketing of Florida fruit

**T**HE ORANGE is supposed to have originated in tropical India, under the shadow of the Himalaya mountains in the valley of the Ganges. As compared with some others, the orange may be considered something of a modern fruit, its development being traceable only during the Christian era. The grape, olive, fig and pomegranate are frequently spoken of in the Bible, but the orange is not mentioned.

Tradition has it that the natives of India brought the orange out into the open from the dense tropical jungles, and under care and sunshine it developed. The tree grew in size and the branches spread, the buds developed, and the roots went deeper; and the golden fruit we know began to take an important place in the requirements of mankind.

## Centuries of Advancement

The present perfection of the orange has been reached only after centuries of study and experimentation by many people of many nations. The fifth century finds the first record of the orange in Europe. A little later writers mention it in Central China and Jaffa. From there it was carried to Spain, doubtless by the Spanish adventurers whose ships explored the East Indies.

There is no historical record of the fact, but it is presumed that the orange was first brought to America by Pedro Menendez de Avilles, who founded St. Augustine, Fla., in 1565. Following an exploration of a portion of Florida by Juan Ponce de Leon, the Spaniards sailed away, leaving it to Jean Ribaut and Rene de Laudonniere to found a French colony in 1564 upon Anastasia Island, directly opposite the present town of St. Augustine.

## The Orange in Florida

In 1565 Philip II of Spain gave the title of Governor of Florida to Pedro Menendez de Avilles, whom history of the time records as being "an admirable soldier and a matchless liar; brave as a mastiff and savage as a wolf." Pedro proved his savagery by massacring some four thousand and fifty of the five hundred French colonists on Anastasia Island, and set up the town of St. Augustine upon the mainland, from which the present city of St. Augustine (the oldest town in the United States) survives. Menendez brought with him a large body of colonists, artisans, farmers, priests and soldiers and development work was commenced at once.

The orange industry of Florida doubtless had its beginning at this time, though when Florida was taken over from the Spaniards something like two hundred and fifty years later, the orange groves of St. Augustine had not made very remarkable progress. The Spaniards of the time were rather prone to beat their ploughshares and pruning hooks into swords, and agricultural and horticultural pursuits suffered in consequence.

After all these centuries came the discovery that the best oranges cannot be reproduced from the planting of their own seeds. It took many hundreds of years to learn that in order to obtain oranges of best quality the seed of the sour orange and lemon or the grapefruit must be planted and permitted to take root for two or three years, when the top may be cut back and the bud stock of a perfect producing orange tree budded upon the old, vigorous roots. Following two more years' growth of the new top in the nursery, the perfected tree, then from four to six feet in height, is

\* From a booklet by the Florida Citrus Exchange

## The Citrus Fruits of Florida\*

By J. H. Ross

President Florida Citrus Exchange

ready for transplanting into the grove.

The development of scientific methods of picking and handling citrus fruits has come along with the development of better nursery stock and "pedigreed" varieties. In former years orange pickers of Florida knocked the fruit from the trees with poles, bruising it and making it subject to premature decay.

This was later improved upon by pulling it from the limbs by hand. Later it was found that if a small part of the stem was permitted to adhere to the fruit that its keeping qualities were improved.

Today fruit is clipped from the stem very carefully so as to leave a small bit of stem adhering, though clipped closely enough to avoid the stem damaging other fruit with which it is packed. Pickers use long ladders to reach the topmost portions of the trees and are very careful to bruise the fruit as little as possible. When picked it is placed in sacks hung over the pickers' shoulders. From these sacks it is emptied into field boxes, which in turn are carried to the packing houses for packing.

The modern orange packing house

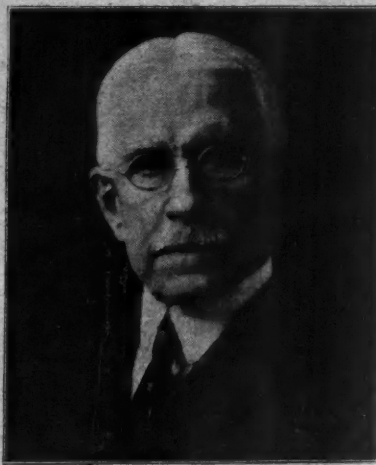
for the handling of human food. From trees to table the fruit is not touched by the bare hand.

Oranges are shipped in boxes or crates with an average capacity of 1½ bushels. They are carefully assorted according to size and quality and commercially are quoted according to the number and quality of oranges packed in the box. Thus, we have oranges from 80's, which are very large indeed, down to 324's, which are the smallest oranges shipped commercially.

## Grapefruit Comparatively New

The grapefruit is of comparatively recent development. Less than a century ago Captain Shaddock brought a fruit to Florida from the East Indies which took the name of the old sea captain. The bloom of the shaddock had the appearance and fragrance of the orange blossom.

The shaddock produced clusters of huge fruit, many of which measured as much as eight inches in diameter. The inside of the fruit had a pinkish tinge and was pithy and not edible. It had no more commercial value than the ordinary mock orange, though it became popular as an ornamental tree



J. H. Ross

crop has reached a volume of approximately 2,500,000 boxes for the present season. This is by no means a capacity crop. The capacity of grapefruit trees now in bearing is probably 6,000,000 boxes. The plantings to date promise 10,000,000 boxes.

## New Industry in By-Products

A new industry for Florida recently has grown up through the operation of commercial plants for the extraction of grapefruit juice, which is bottled and sterilized and put upon the markets in much the same form that grape juice is sold. Marmalades of exquisite palatability are being made from both oranges and grapefruit and the utilizing of all low grade appearing fruit promises to add much to the value of the citrus crop.

## A Record of Steady Growth

The citrus industry of Florida has undergone a steady and healthful growth from the time of its humble beginning. Last year was rather an off year in the matter of production, yet the crop amounted to approximately 5,000,000 boxes, having a market value in excess of \$20,000,000. Estimates for the present season's crop are in the neighborhood of 8,000,000 boxes of practically corresponding value. This is not a capacity crop. The capacity of the groves of Florida, both grapefruit and oranges, is now about 12,000,000 boxes.

## Co-operation in Florida Marketing

The modern development of the citrus fruit industry of Florida really dates from the beginning of co-operative marketing 10 years ago. Results to growers from competitive buying on the part of speculative fruit interests at that time were most unsatisfactory. Just before the beginning of co-operative marketing some growers received as little as 80 cents a box for oranges. Since the beginning of co-operative marketing the average return for oranges is \$2 per box. Today this co-operative, non-profit marketing organization of Florida numbers something like 4,000 members, whose fruit it handles. It maintains a chain of modernly equipped packing houses which covers citrus Florida. To better aid its marketing operations it maintains representatives in all the northern markets and is in closest touch with the marketing situation. It keeps citrus fruits flowing from the state to the northern markets during the season with a steady hand, knowing exactly what each market in each of the consuming centers can utilize and not overstocking any one distributing center so as to break prices.

The best proof of the beneficial workings of this co-operative marketing organization is to be found in the greatly higher average price which Florida citrus fruits have brought in the markets since the Florida Citrus Exchange became a strong factor in the state. It is notable too, that these increased prices have been realized in the face of constantly increasing production.

Under the beneficent influence of a semi-tropical sun, fanned by the breezes from three seas, results the finest climate on the earth summer and winter, especially adapted to citrus culture. Away from the maddening confusion of modern manufacturing, commerce and transportation, the citrus industry invites men of refinement and industry to a gentleman's occupation, which brings one so near to the great white throne in a Florida orange grove, with a soul attuned, one can hear the angels sing, "Glory to God in the highest, peace on earth, good-will toward men."



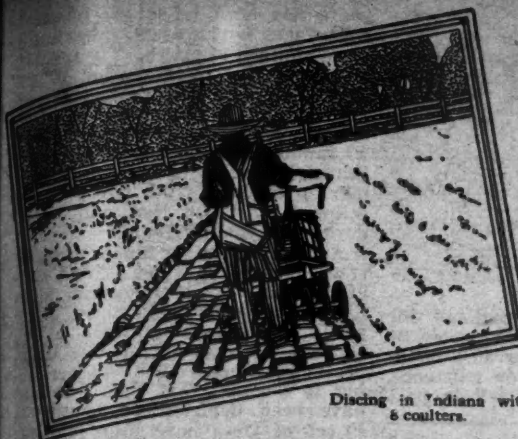
A Mature Orange Grove in Florida from Which the Sealdsweet Brand Is Produced

represents a considerable investment in labor-saving machinery. Fruit is washed, polished, assorted and wrapped in papers, being placed in boxes which are securely nailed for shipment. Sanitary conditions under which citrus fruits are handled in the packing house could hardly be more perfect

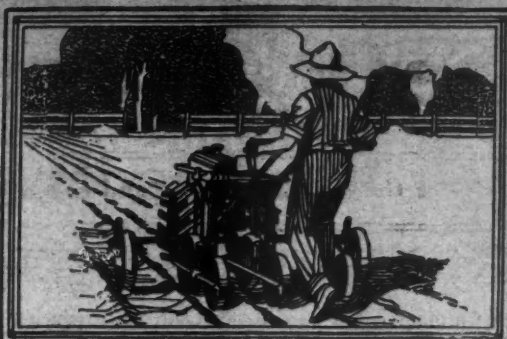
for lawns and walks. From this fruit has been developed the grapefruit of today.

The development of the grapefruit industry in Florida is a record of rapid progress. Beginning about 30 years ago with the products of a few trees, the Florida grapefruit





Discing in Indiana with 8 coulters.



Utilitor operating 3 row gang seeder.



A Utilitor plows faster and better than a horse or mule.



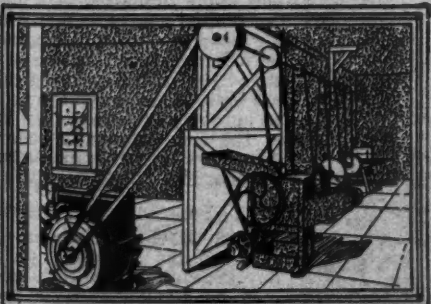
Utilitor has ample clearance for straddle row cultivation.



For Truck Garden Work the Utilitor is unsurpassed.



Showing new corn planter attachment for Utilitor.



Farmers are using the powerful Utilitor for line-shaft belt work.

# MIDWEST UTILITOR

## The Men Who Sell It Wanted to Know So They Used 4000 Acres to Find Out

Your protection in buying a Utilitor lies in the fact that this machine has been forced to prove its own dependability and usefulness before any man would attempt to sell it to you.

Long before we attempted to establish a selling organization for the Utilitor, we sent our engineers and agricultural experts over the country and told them to stay until they had proved beyond the shadow of a doubt that the Utilitor would perform satisfactorily under the conditions placed upon it.

They tried the Utilitor in all kinds of soil breaking, cultivating, seeding, truck garden work, nursery work, fruit cultivation and last but not least they conducted an exhaustive test of the Utilitor on belt work from running a grindstone to cutting wood.

We found that in certain parts of the country for field work special rims were necessary; in other parts of the country we found that guards on the machine to protect the plants were necessary. In fact we found many things to correct and several things that the Utilitor could not do, such as working on steep hill sides and in swampy lands.

But we proved above all else that with the adoption of the changes found necessary as a result of the many gruelling tests, that the Utilitor was unquestionably a power farming utility that would appeal to the practical farmer and food raiser as a cost-cutting, profit-building piece of machinery.

We then told the selling field that we were ready to do business with them. Now here is where all this begins to concern you.

These hard-headed keen merchandisers had no trouble in seeing the necessity for such a machine as the Utilitor, but they were not content to accept our word *alone* for what the Utilitor would do—how it would hold up—how well it would work.

They readily saw that the resources and experience of the Midwest Engine Company were behind every Utilitor in the form of the most comprehensive service system to owners which they had ever seen instituted.

Still they were not satisfied. They wanted to know first hand what the Utilitor would do in usage, because **THEY** were the men who had to show **YOU** what the Utilitor **WOULD** DO.

So they conducted their **OWN** tests. It has been estimated conservatively that the Utilitor has undergone tests in the hands of salesmen and dealers involving practically every possible use—some 4000 ACRES having been used to **PROVE** to these men that the Utilitor **IS BUILT RIGHT, STAYS RIGHT** and is applicable to the work for which it is intended.

What happened is this—the Utilitor sold itself to the men who would **SELL IT TO YOU**.

Can you ask for a better, a safer method of investigating the Utilitor than to **KNOW FIRST** that the man who sells it knows that it thoroughly lives up to the expectations of **EVERY** man who sells it.

**But Regardless of All This, Here is What We Want You to Do When You Are Ready**

Don't accept anybody's word for the Utilitor's performance but your **OWN**. Let all that we have told you simply be an incentive to want to know more about this machine for **YOURSELF**. Any Utilitor dealer in your vicinity will give you a demonstration of the Utilitor

doing the sort of work done on your place. You can rest assured that he will tell you very frankly if the Utilitor **WON'T** do your work. You will be under no obligation to buy a Utilitor if you are not completely satisfied with the Utilitor in every respect—mechanically, economically and otherwise.

If you don't know the Utilitor dealer in your locality, fill out the coupon and mail it to us and we will send you his name. We will be glad to send you any special information on the Utilitor which you may require.

**MIDWEST ENGINE CO., Indianapolis, U. S. A.**

**Dependable Power**

**MIDWEST ENGINE CO.**  
Sales Division R  
INDIANAPOLIS, U. S. A.

Cut around the dotted line and paste this address on a post card if you do not care to send coupon

Gentlemen—Please send me without obligation on my part your booklet "BEATING THE GAME" and the name of your nearest dealer. I am giving you the following information so that you can show me how I can use the Utilitor profitably on my place.

acres. I raise  
I produced last year  
muddy, marshy, rolling  
State



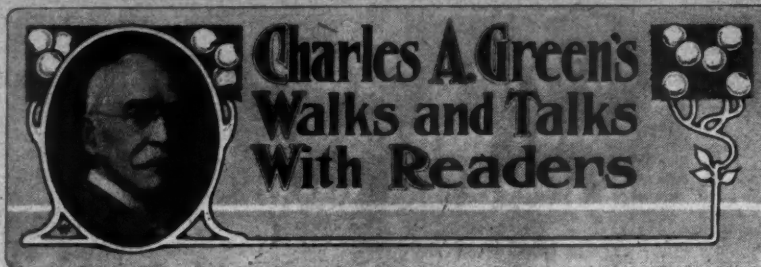
### HIGHER PRICES FOR FRUIT TREES

There are few people who are surprised that fruit trees, plants and vines should be somewhat higher priced than formerly, since every one must know that the price of labor has advanced and that supplies of all kinds used by the nurseryman, such as rope, burlap, excelsior, labels, nails, etc., have doubled in value.

But there is another cause for higher prices that must seriously affect the nursery business and the orchards of this wonderful fruit producing country. I refer to the absence of supplies from France. In past years France has been the source of vast amounts of seedlings which have been shipped to this country

each season to be planted and budded or grafted by American nurserymen, but the American supply of these vital nursery products has been entirely cut off owing to the world-wide war.

Instead of producing seedlings for American nurserymen the people of France have been engaged in a hand-to-hand war struggle for existence, and labor in France, which in past



### American Fruit Grower

years has been trivial as compared with wages in this country, has leaped up to unheard of prices. The result of all this is that in the spring of 1920 there will be scarcely any planting by nurserymen in the way of trees. Since this absence of planting causes a famine throughout the United States, it can readily be seen that former prices for fruit trees will be eclipsed by those that will prevail during the coming years.

Another reason for higher prices for trees, plants and vines is that nurserymen have not been securing prices high enough to yield them a fair profit, thus possibly half of the smaller nurserymen in the United States have gone out of business owing to the fact that their treasuries have been depleted by low prices. Prices of trees have been far lower than they should have been for many years for trees.

The question now arises, can planters afford to pay 75 cents or \$1.00 each for first class fruit trees? I do not hesitate to say that they can afford to buy them at this price and that they cannot afford to get along without buying them and planting them, for they are a necessity as well as a luxury. What is \$1.00 for the price of a tree that may in one season yield 10 or 15 barrels of apples or nearly as many pears?

### The Honeybee as a Fruit Producer

At last the day of the appreciation of the honeybee has arrived. Maeterlinck, the great Belgian philosopher, has been studying the honeybee as an object of wonder and admiration. He has discovered that the beehive contains a system of control and command of industry and audacity almost beyond the belief of man. He tells us that the honeybee can be said to excel man in what we may call political economy, teaching men how to run nations successfully. But setting philosophy aside, we are becoming appreciative of the bee as a factor in fruit growing so that now fruit growers are chasing after bee men, desiring to remove the hives to the vicinity of orchards or berry fields or to pay a price for the privilege of storing the bees in the vicinity of orchards, whereas in the past they would have through ignorance considered the bee destructive to some fruits. But it has been discovered that bees do not puncture the skins of plums and peaches but simply sip the juice that exudes from fruit punctured or injured by wasps, birds or other cause.

Years ago I used to find in my beds of strawberries countless thousands of honeybees making the air melodious as they sped from one blossom to another. I also saw vast numbers of bees about my blossoming peach, pear and apple orchards. Of late years I do not find nearly so many bees working upon my fruits. I cannot explain why there should be fewer bees now than 10 or 20 years ago. Farmers have in the past been so unwise as to spray their trees when in blossom at the time when the bees would be destroyed in vast numbers but they are learning better than this now.

### Success in Nut Growing

More attention is being paid each year to nut growing. Some advise nut growing by the roadsides, which may be good advice but my opinion is that the apple or cherry is the best tree for roadside planting. Years ago when I was told how profitable nut growing could be made, I could not believe it possible that improved varieties of pecans could be sold at 75 to 75 cents a pound, but this spring I paid 85 cents a pound direct to the grower. This grade of pecan nut sold in our department stores for \$1.25 per pound, the same as I bought for 85 cents, tending to indicate that nut lovers will buy a high class nut at almost any price.

Some think the pecan is the best quality of all nuts. I am very fond of pecans but consider the English walnut almost as good. I have always been a lover of the pecan which of late years has come in such favor as a substitute for butter and as a nourishing food for man.

## With a Federal on the Farm

### Chore-time and the Federal

Most any time is chore time on the farm.

Those hundred and one big and little jobs that go to make up the daily routine of farm labor—hauling silage to the silo filler, fire wood from the wood lot, fertilizer and seed to the drill and planter, fuel, oil and repairs to the tractor in the field, field corn to the cribs—all can be done more easily,—often in almost the time it takes to hitch up a team—if there's a Federal at work on your farm.

The Federal has become a big favorite in the farm field because it is the kind of a truck that adapts itself most readily to farm work. Its rugged strength is the result of ten years of experience in truck building and of that extraordinary care in manufacturing that has given Federal its good name in the farm field.

The Federal dealer near you will be glad to co-operate in the choice of body and capacity that most nearly meets your requirements of a motor truck on your farm.

This tag is the sign of the "Tenth Year Federal". It is significant of the experience and responsibility of a company that, in the past ten years, has produced more than \$50,000,000 worth of successful motor trucks.



"Traffic News" a Federal magazine describing the many profitable uses to which motor trucks are being put on the farm and elsewhere will be sent you free each month if you will request it.

FEDERAL MOTOR TRUCK CO  
DETROIT, MICHIGAN

Another

# FEDERAL

One to Five Ton Capacities



*America's First  
Cord Tire*



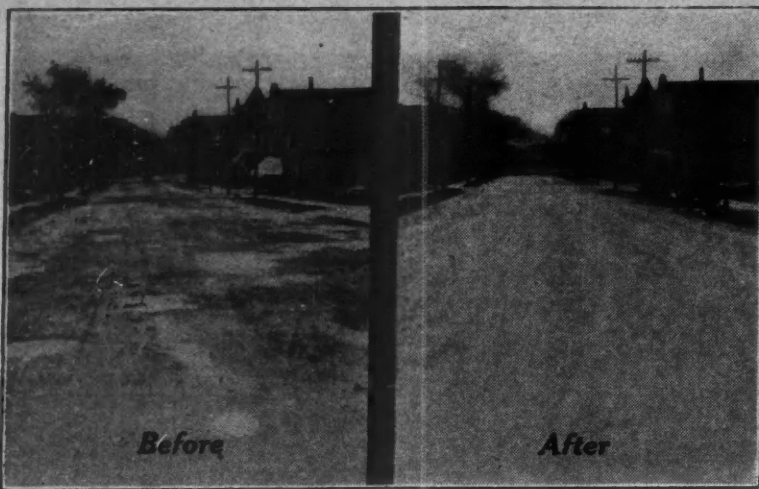
**Your Goodrich Dealer  
offers you a *Silvertown  
Cord Tire* with the  
conscious pride that a  
good merchant has in  
a good product.**

**Goodrich Tires**

*Best in the Long Run*

The B. F. Goodrich Rubber Company, Akron, Ohio. Adjustment Basis: Silvertown Cords, 8000 Miles. Fabric Tires, 6000 Miles





Photograph shows wretched condition of Fourth Avenue, Milwaukee, Wis., before it was salvaged with "Tarvia X."

The same street, showing how the "Tarvia X" resurfacing has made it smooth, mudless, dustless and traffic-proof.

## To Get Good Roads—Cheaply—Quickly— Save the Roads You Have!

MILES and miles of good gravel and macadam roads throughout the country can be restored to meet modern traffic requirements. The way to do this is to utilize the existing road as a foundation for a traffic-proof Tarvia top. And where crushed stone or slag is available, the community so favored not only can save its roads but *save considerable money* in the bargain.

Many progressive communities recognize this fact, and are carrying out an extended road salvage program, rather than build new roads at present exorbitant prices.

For example, the City of Milwaukee has in this way transformed 1,700,000 square yards of water-bound macadam into splendid modern streets to the complete satisfaction of both the city authorities and the traveling public.

Whether you require a good binder for new construction, a dust-preventive, a patching or maintenance material, Tarvia in its various grades provides an economical and satisfactory solution.

Tarvia Roads are durable, dustless and mudless. They are also water-proof and frost-proof and require a minimum of upkeep expense.

### Special Service Department

In order to bring the facts before taxpayers as well as road authorities, The Barrett Company has organized a Special Service Department which keeps up to the minute on all road problems. If you will write to the nearest office regarding road conditions or problems in your vicinity, the matter will have the prompt attention of experienced engineers. This service is free for the asking.

If you want better roads and lower taxes, this Department can greatly assist you.

Illustrated Booklet, telling about the various Tarvia treatments, free on request.

# Tarvia

Preserves Roads—Prevents Dust

The Barrett Company

New York  
Cincinnati  
Minneapolis  
Atlanta  
Lebanon  
Toledo

Chicago  
Pittsburgh  
Dallas  
Duluth  
Youngstown  
Columbus

Philadelphia  
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Nashville  
Salt Lake City  
Milwaukee  
Richmond

Boston  
New Orleans  
Bryn Mawr  
Bangor  
Elizabethtown  
Lafayette

St. Louis  
Birmingham  
Seattle  
Washington  
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Cleveland  
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THE BARRETT COMPANY, Limited:  
Winnipeg

Sydney, N. S.

Vancouver

St. John, N. B.

Halifax, N. S.

## Maintenance of Earth Roads

By H. L. Kuelling, Wisconsin

TO MAINTAIN an earth road so that it will adequately take care of heavy traffic it is essential first that no water be allowed to stand on the road surface or in the ditches, and secondly that defects occurring in the surface be repaired immediately and in a manner that will form a crust sufficient to maintain the loads and resist the wear caused by traffic.

The first can be accomplished only by grading and draining the road in a manner that will permit water to drain quickly from the surface after every rain, and the second by adding clay and sand in the proper proportions as required, shaping up the surface with a light grader, and keeping the traveled surface smooth and even with the road planer, after which the earth surface eventually becomes smooth and impervious to water. The result is an extremely satisfactory road at a very low cost to the public.

It is necessary at times to open up ditches along intersecting roads to carry the excess water away from the

dry enough to move freely along the grader blade. After the center is smoothed up begin at the ditch line and work toward the center of the road cutting very lightly with the blade of the grader set at the proper angle to allow the dirt to move freely along the blade toward the center of the road. Make as many round trips as are required to bring the surface to the proper crown and exercise great care or an excessive crown will be had at certain places.

When an excessive amount of material is brought up from the ditches so that it tends to raise the center of the road too high at that particular point, move the surplus material ahead to some low point by the use of a slip scraper and spread it out evenly. In the fall of the year the grass and weeds should be again cut away from the shoulders of the road with a grader leaving them bare on entering the winter season. This permits the frost to thaw out at the same time in the spring on the road shoulders that



Tractor and Two Graders Doing Heavy Work on a New Road

highway to some nearby stream or dry run, or even to open up ditches through private property to produce the same results.

### Spring Work on Roads

All drainage structures should be kept in good repair and free and open so that there may be no impediment to the flow of water. The first work in the spring should be the thorough opening and cleaning of all culverts and outlets of drain tile. Likewise the last job in the fall should be of a similar nature, and several times during the season they should be looked after. The filling up and stoppage of culverts cause more damage to road surfaces than any other one thing.

The best tool for use on earth road maintenance is a light blade grader. Where a patrol system of maintenance is used, this system is the very best. The ideal grader is one strong enough to stand the required strain when pulled by four horses in cleaning out ditches and other necessary work that is too heavy for two horses, yet light enough and so constructed that the draft will be such that two horses can easily pull it when doing ordinary grader work.

The majority of earth roads have been previously graded and it is necessary to clean out the ditches and true up the crown of the road by the use of the light grader two or three times a season. This work requires four horses.

### How to Use a Grader

If grass or weeds cover the shoulders or ditches remove them by cutting them away from the edge of the road with a good sharp grader blade, cutting just deep enough to remove the crown of the grass roots. When cut away remove the grass and weeds and, if possible, use them at some point on the road to prevent the side banks of fills from washing.

The center of an earth road dries more quickly after a rain than do the sides. Therefore the first round trip over the road with a grader after each rain is on the center with the blade set at an angle that will move the surplus dirt ahead and out. This method smooths up the center first where the traffic should travel and wishes to travel. Do not attempt to use the grader after a rain until the earth is

it does in the center of the road, thereby permitting a proper drainage from the center of the road to the ditches. Where a mat of grass and weeds is allowed to remain on the road shoulders the frost remains in the shoulders several days after it has thawed out within the limits of the traveled way. The result on heavy clay soils where such conditions exist is just a sea of mud.

Frequently it is necessary to cut the earth away from the center of the road to avoid an excessive crown, as continual grading and draining toward the center together with the pounding down of the shoulder by the travel has a tendency to increase the crown. It is advisable to reverse the direction of operating the light grader frequently. This removes any wavy appearance that has been brought about by the grader blade dipping in or the wheels passing over some object in the roadway and results in a more uniform crown.

### Do not Leave a Ridge

While good results can be obtained with the use of a drag or planer on the average, better results will be obtained with the use of the light grader, especially if the maintenance is done by patrols. However, in case the planer is not obtainable better results are obtained by the use of a planer than by the use of a drag. This is because of the fact that it has a longer base and does not tend to put the road in ridges, but rather tends to make it smoother. The proper time to drag or plane a road is when the earth is just dry enough to move freely and not run too easily from the traffic following the drag or planer. The lighter the soil the wetter it may be when dragged. Another time it is very essential to drag is just before the freeze up in the fall so that the road will freeze in a somewhat smooth condition. Benefits may even be derived by dragging a bare road in the winter as the points of dirt often dry out by freezing and can be knocked off with a planer or drag. In dragging or planing a road one should not attempt to carry any excess amount of material as better results are obtained when only enough loose earth is moved to fill the ruts and depressions.



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## "Horse Sense"



Christopher Columbus surprised the Old World in 1492—the Traffic Truck has surprised the whole world at \$1495.

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One of the largest users of 2-ton motor trucks in the United States holds their shipping clerks responsible for overloading their trucks. Besides instructing the men, they have a sign on the back of each cab which reads, "DO NOT OVERLOAD, CAPACITY 4,000 LBS." That's a good reminder.

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The Traffic is the lowest priced 4,000-lb. capacity truck in the world. Built of standardized units.

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Seal Continental 3 1/2 x 5 motor; Covert transmission; multiple disc clutch; Bosch magnet; Carter carburetor; 4-piece shell, cellular type radiator; drop forged front axle with Timken roller bearings; Russell rear axle, internal roller bearings; semi-elliptic front and rear springs; 8-inch U-bolts; Standard 5 speed, 34 x 3 1/2 front, 34 x 5 rear, 34-inch wheelbase; 122-inch length of frame behind driver's seat; oil cup lubricating system; semi painted, striped and varnished; driver's lazy-back seat and fashion regular equipment. Pneumatic cord tire equipment at extra cost.

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Traffic Truck chassis equipped with cab, hoist, steel dump body (painted and varnished), no extras required, \$1990 complete, factory.

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Traffic policy to make direct connections in every city, town and village in the United States and Canada.

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4,000 LBS. CAPACITY

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Takes the "L" out of SAVING

There are more Traffic Trucks saving time and making money for orchardists and agriculturists than in any other avenue of industry.

Thousands of fruit growers and farmers have cut in half their cost of hauling with Traffic Trucks. They are saving two-thirds of the time formerly spent in hauling with teams and are devoting it to duties which harvest additional dollars, taking the "L" out of slaving.

To no man does the Traffic mean more than it does to those who depend upon the soil for profit, where time saving means money making.

Do you think you could profit by hauling three loads to market while your neighbor is hauling one with teams that cost him as much to haul as the three with a Traffic? The Traffic hauls a 4,000-lb. load 14 miles in one hour for 30c worth of gasoline.

The Traffic's 4,000-lb. capacity is what fruit growers have been using, want, and are demanding.

Money cannot buy a truck built of better materials than assembled in the Traffic—yet, it is **the lowest priced 4,000-lb. capacity truck in the world.**

Specialization on one model only and quantity production have made the low price possible, which saves hundreds of dollars in first cost and hundreds of dollars in maintenance cost.

A variety of bodies are built at the Traffic factory for equipping the chassis to carry every type of load.

**Write for Catalog Today**

**Traffic Motor Truck Corporation, St. Louis, U. S. A.**

Largest exclusive builders of 4,000-lb. capacity trucks in the world



# Fairbanks-Morse "Z" Farm Engines

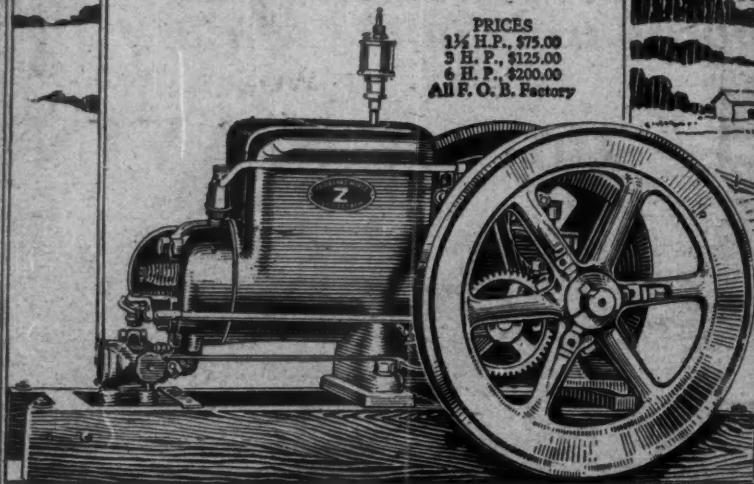
**T**HE supremacy of the Fairbanks-Morse "Z" Farm Engine was predestined. It had to be. For not another engine offered so much in workmanship—in factory-created quality—and in farm-tested performance.

Over a quarter-million shrewd judges of engine values made this engine famous over-night! They found in the "Z" that dependability that they had hoped for since the day of the first farm engine. They justified the faith of the men who made this engine by endorsing their product to the extent of buying over fifteen million dollars worth from "Z" Engine dealers.

In the "Z" they bought dependable power—more than enough for every farm need for which the type you choose is adapted—dependable workmanship which has made the utmost of high grade materials—a correct design—aided by 400 Bosch Magneto Service Stations—all unified by the efficient service rendered by thousands of "Z" Engine dealers.

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PRICES  
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## ARE YOU SATISFIED?

The leading national fruit publication has just opened offices in Springfield, Mass., for the purpose of organizing a high-grade selling organization for the Circulation Department in the New England States.

If you want a greater salary with expenses paid mail application to-day.

**E. H. MOSES**

Eastern Circulation Representative

Room 808, 318 Main St.

Springfield, Mass.

Kindly mention Fruit Grower when writing to advertisers

## Small Field that Made Big Profit

(Continued from page 6)

rode it. We dragged that field lengthwise, in circles and every other way, and it sure did look "ruined," so much so that several of my neighbors did not hesitate to say that jail was the place for me. The idea of deliberately ruining such a marvelous berry bed.

### Watered During Drought

Well, see what happened. In about two weeks those old rows looked as green as in April, but they were now only six inches wide and not quite so straight. Next, I tapped the water main in the road and took in the city water in a three-quarter inch pipe. I had enough rubber hose to reach the entire length of the "farm." I got a whirling sprayer, two of them, and a "Y" for the hose. With this rig I soon put on 4½ inches of water over the entire farm. My, how those plants did grow. They simply jumped, and by late autumn of 1919 they looked even finer than the year before and not a single weed in them.

I have more acreage this year, and am better prepared. I have water handy in case of drought, which rarely comes so early in the season, and I expect an even larger crop than I had last season. It seems to me there is nothing one can do in a small way to make so much easy money as in raising berries. The crop is sure, or at least much surer than any crop I know of. The work to be done is little, but that little must be done if the maximum results are to be obtained.

### Some Tips for Beginners

I do not pretend to know all about berry culture, but there are some things that I do know, and am sure of. I do not pretend to say that my improved plants were altogether responsible for my remarkable crop last year. Good soil and good, intelligent cultivation were big factors. But I do know that this variety is the only one I have ever seen that would give me one-half as much, and we have tried many. The ground this crop was on was the seventh year in berries, if I remember right. But it had been well supplied with plant food. There is only one way to improve a variety, that I know of and that is by selection. This I have done, and the results have surprised and delighted me. I am quite certain that most men in deep in berries will agree with me when I say that Senator Dunlap is the most widely grown berry in America. The reasons for this are many. They are the best to can, best color, best flavor, they make lots of plants, seldom run, and never die. They have beautiful foliage, strong stems, ripen nearly as early as the earliest and last longer than any variety. We have picked them from May 25 to July 7. There is only one berry that has ever come in sight of my improved Dunlap and that is Dr. Burrell, and I am told that this variety is related to Senator Dunlap.

Whatever you do in berry growing, don't allow them to spread all over the ground. Keep them in rows. The picking is much easier and the sun gets into the foliage so much better, fruit is larger and more of it. They don't dry out so quick, stand the weather better, too. When putting out your plants, get them into the ground as early as possible, and cultivate good, as you know how, which will not be by laying in a hammock fanning yourself and cussing the flies.

### CO-OPERATIVE LAWS FAVORED

Three states, Louisiana, New York and Pennsylvania, have passed laws dealing with co-operative organizations based upon the suggested co-operative law published by the Bureau of Markets, United States Department of Agriculture, while similar legislation has been under consideration in other states during recent sessions of their legislatures.



# Oldsmobile

## ECONOMY Truck

*where efficiency  
is essential*

IN FRUIT growing areas no truck has so thoroughly demonstrated its ability to stand up under continuous work as the Oldsmobile Economy Truck.

For hauling at all seasons—transporting, packing and shipping supplies and the swift delivery of fruits to market without danger of damage or spoilage—the Oldsmobile has ably demonstrated its unlimited usefulness and maximum economy.

Its powerful motor, internal gear drive and big pneumatic tires enable it to travel speedily under all conditions—over any kind of ground right into the orchard. Electric lighting equipment lengthens its daily hours of usefulness.

**OLDS MOTOR WORKS**

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# Apple Blotch In Ohio and Its Control

By R. B. Cruickshank, Ohio

**A**LTHOUGH a serious disease in other middle western states for some time, apple blotch has caused real concern here in Ohio for only the past few years. It was later in getting into Ohio; it has attacked only certain varieties; it had until recently been a menace in only one important commercial section and its progress has been gradual. On the whole it has been destructive to scattered individuals rather than to whole orchard sections. Now, however, growers are awake to the fact that though considered a southern disease, it has spread as far east as the Pennsylvania line and north into the lake counties and that it is causing a tremendous loss in the apple orchards of the state. While its greatest destruction is in the southern counties, yet there appears to be no reason why it will not require exact control measures all through the state.

In the sections in which it has been established the longest, it has shown its capability of totally destroying the crop on certain varieties. Little has been done to control it and most of that was ill-advised and inefficient. Measures which were apparently successful in other states has fallen short here. A strong feeling of pessimism was overtaking the growers due to the ruthless destruction and insistent advance of the disease. Many trees of susceptible kinds had been cut down and in some instances whole blocks of them were slated for the wood pile, as so much otherwise worthless possessions.

It appears however that such heroic acts are unnecessary and that the trouble can be fought successfully and with expectation of immediate results. Demonstrations in several orchards this past summer have been uniformly gratifying in the positiveness of their control.

First, it may be said that in 1918 some work was done on some trees

of Smith Cider. The trees were thoroughly pruned to reduce the number of twig cankers. Bordeaux was applied three, five and seven weeks after the petal-fall spray in accordance with the best recommendations obtainable. While some apples were marketed from these trees for the first time in four or five years, yet the control was

disappointing. Observation showed blotches developing under the spray residue of the first application which seemed to prove that the infection had occurred before the Bordeaux was put on. It seemed essential too that the apples be kept constantly covered with a fungicide through a long period of possible infection.



The Crop from One Apple Tree Not Sprayed for Blotch Control



The Crop from One Tree Thoroughly Sprayed for Blotch Control

It was decided, therefore, in 1919 to begin two weeks after the petal-fall and to apply further sprays four, six and 10 weeks after. The varieties worked upon were Smith Cider, Ben Davis and Oldenburg, all very susceptible kinds. Bordeaux mixture (8-4-50) was used and applied with spray guns. Mr. F. H. Beach had charge of most of the demonstrations and is responsible for their success.

An estimate of the results can be obtained from the accompanying illustrations. These show typical comparisons between the sprayed trees and the unsprayed ones.

The variety is Ben Davis. The amount of infection may be seen from the fact that the unsprayed tree carried 98 per cent blotched fruit, very little of which could be marketed. Much of the crop dropped when small. The efficiency of the control may be judged from the fact that 90 per cent of the crop was absolutely clean, not having so much as a spot the size of a pinhead. In addition the other 10 per cent was marketable, and if mixed through the clean apples would not have noticeably affected the quality of the pack. Note also the greater size of the crop, a feature which appeared in every case under observation. These results were obtained in the first attempt at control in that orchard. Those obtained in other orchards were substantially the same.

In considering these results, it must be remembered that they were obtained in only one season's trial and that future developments here and elsewhere may bring about some changes in practice. What they do show, however, is that no matter how susceptible the variety or how severe the infection, complete commercial control may be effected if sufficient effort is made.

In spraying for blotch every side of the apple must be covered with the

(Continued on page 24)

## Looking Back on the 1919 Peach Season

By C. H. Connors, New Jersey

**T**HE peach crop of 1919 in New Jersey was beset with hardships from the very beginning. The blooming season marked the beginning of the troubles. At this time the southern part of the state to the limits of the coastal plain region witnessed a very severe attack of brown rot upon the blossoms and twigs of a number of varieties. Carman was one of the greatest sufferers. Strange to relate, Champion was not attacked by this disease at this time. Elberta and other varieties suffered to a less extent than Carman, although in some localities the crop of Carman was reduced 50 per cent. An emergency spray of self-boiled lime-sulphur applied during the blooming season assisted in reducing the ravages.

### Brown Rot in Cankers

This particular form of brown rot is believed to be carried over, in large measure, in cankers on the current season's growth. It seems to attack the buds, especially those formed early in the season, and forms small cankers to spread the disease the following year. The application of a concentrated lime-sulphur seems to have little or no effect on the spread of the disease, but careful spraying at the petal-fall and shuck-fall stages will do much to keep this disease down.

The northern counties suffered somewhat from frost injury. Just as the flowers were in full bloom a frost occurred when the temperature dropped to 24 degrees F. in some places. Those blossoms that were just ready for pollination suffered, creating considerable alarm. However, the loss was not as great as was anticipated.

### Aphids on Peaches

Rare are aphids serious on peaches. This happened in one or two localities in the state. The aphids attacked the

newly started leaves and blossoms, causing a slight loss. It may be that it will be necessary to introduce a new spray application to combat this pest. However, the attack is seldom serious, and this particular one is ascribed to the mild winter which permitted the living over of a large number of eggs.

### Effect of Rainfall on Brown Rot

Excessive rains fell during the growing season, especially after the middle of July. The result was a rapid swell-

ing of the fruit with the consequent softness and susceptibility to disease attack. The expected happened. Brown rot was very severe. This disease attacked the fruit before it was ripe and great loss was experienced. All varieties seemed to suffer, but Champion was perhaps the worst. It was a very severe lesson to some growers who are inclined to neglect spraying. The disease was present in all orchards, but those fruits which were kept coated with spray material

suffered less and produced the largest quantities of perfect fruit.

This was a season to try varieties and one, at least, has fallen by the wayside. J. H. Hale was found to be particularly susceptible to rot, even in well-sprayed orchards, and the loss on this variety was upwards of 50 per cent. This variety was found also to behave in a peculiar manner. Frequently one fruit on a twig would develop to good size while the remainder on the twig remained stunted. These facts, together with the well-known slow rate of growth of this variety have lessened its popularity. The variety unquestionably has merits, but it seems to be one that is adapted only to certain conditions.

With so much moisture, the fruits of all varieties were inclined to be soggy and lacked flavor. Most varieties were very flat while the more acid varieties, like Early Crawford, were exceedingly acid. Then, too, a number of varieties that are usually rated as freestones were clingstones in some localities, among them Lola.

### The Oriental Peach Pest

In at least one locality, the damage from the oriental peach pest is increasing. The usual effect seen is the increase in the number of side twigs, due to the killing of the terminal bud by the young larvae. Furthermore, it has been found to work in the fruit much after the fashion of the codling moth in apples. This damage occurred from the beginning of the mid-season, about the ripening time of Belle, through the Elberta season and for about one week later. The larva usually entered at the stem end, sometimes at the apex, and chambered toward the stone, making a considerable amount of frass. It was thought at first to be codling moth, as the larva of this insect sometimes works

(Continued on page 24)



A Typical Case of Brown Rot on a Mature Peach



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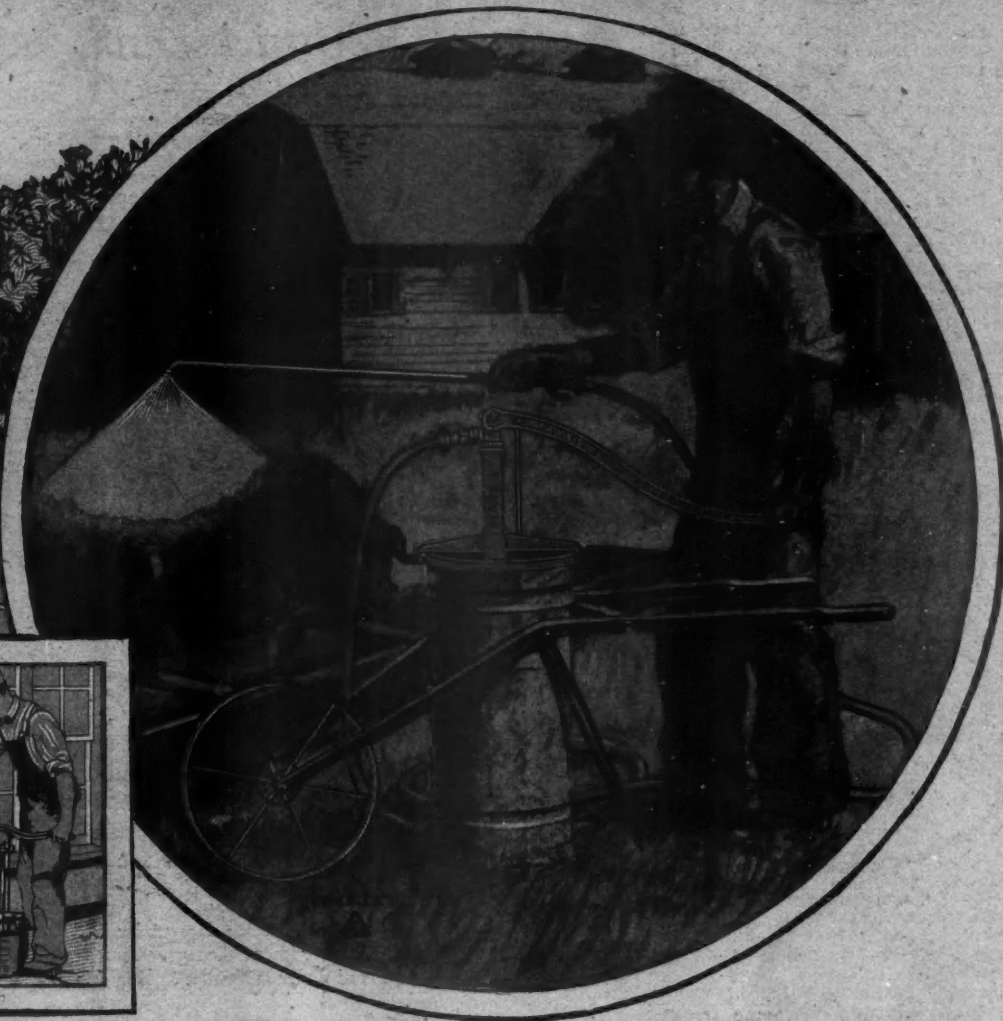
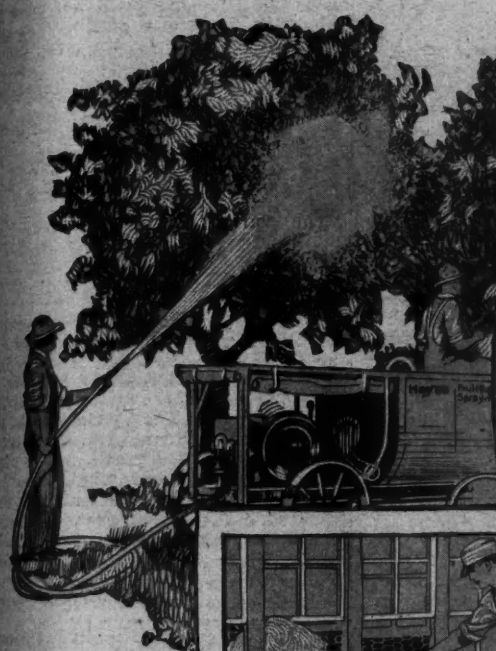
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Gentlemen: Please send, FREE and without obli-  
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Number of trees.....Average age.....

Other uses.....

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## Save Your Hogs from Disease and Death

**D**O YOU KNOW that Hog Cholera alone carried off nearly \$100,000,000 worth of fine hogs last year? That one out of ten hogs died from this terrible plague? And that the death rate in some states was one out of three? Do you know, too, that Mixed Infection was but little less costly? And that thorough disinfection and better sanitation is the only known remedy?

It's a fact! Farmers ought to talk to their dealer—and learn how a Hayes Sprayer will enable them to easily and quickly whitewash their barns and fences, keep their pens and yards disinfected, their premises sanitary, and their hogs clean skinned, fat and healthy.

Also how spraying will kill the millions of torturing, blood-sucking lice that prevent hogs from putting on money-making

weight, and that so lower vitality that hogs fall easy victims to deadly disease.

It is time farmers threw away dips, sprinkling cans and other worthless methods. Get a Hayes Sprayer now. See how its scientific, vapory, fog-like super-spray envelops every hog like a mist of smoke. Works the solution under ears, under shoulders, *every part* of the skin where these disgusting pests hide, and where no ordinary method can reach.

No farmer can afford to raise hogs without this simple, easy method of disease prevention. It is the *only practical* way to safeguard your hog profits. The Hayes Wheelbarrow Sprayer is good not only for hogs, but also for fruit, potatoes, poultry and a dozen other daily farm uses. It will prove a wonderfully profitable investment.

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Tell him what you want your sprayer to do, and he will tell you which of the Fifty Styles of Hayes Sprayers is best suited to your needs, and its price.

He will also give you a copy of the New Hayes Sprayer Book and Valuable Spraying Guide FREE. Or, send the coupon to us.

HAYES PUMP & PLANTER CO., Dept. P GALVA, ILL.

# HAYES FRUIT-FOG Sprayers



## Winter Killing Due to Drought

By Frank E. McCall, South Dakota

**W**INTERKILLING in some of its forms annually causes a high death rate among the trees of the average farm orchard. This injury may be in the form of sunscald or the killing of the cambium on the southwest side of the tree; or many varieties are entirely too tender and succumb to the subzero temperature. Many of these merely die down to the ground while others perish entirely. The majority, however, are winter-killed because of neglect during the previous summer and fall. Usually, little or no culture is provided and weeds are permitted to rob the trees of their rightful food supply. Many of these trees show immediate effects of this neglect while the larger part of them suffer most during the long, dry, cold winter months.

The average autumn is usually a dry period in the Great Northern Plains Area. The ground usually freezes in a dry condition. The trees, standing in this dry soil, suffer from drought during the winter months. This is shown by death outright or a stunted, half-hearted growth the following season.

To determine the effect of winter drought upon fruit trees, experimental demonstrations were carried out on 15 widely separated farms in South Dakota. The Wealthy apple, which is considered the most satisfactory for the state, was the variety used in the tests. In each instance, the trees had been planted the spring of 1916. The records were tabulated for the four seasons, 1916-1919 inclusive.

Fifty trees each in four different lots were selected and each given different treatment.

Lot one, the trees were planted and left standing in prairie sod.

Lot two was cultivated each 10 days until August 10th.

Lot three was cultivated each 10 days until July 1st, followed by a cover crop of fall rye or buckwheat.

Lot four was cultivated each 10 days until August 10th, then watered heavily just before the ground froze for the winter.

The following table clearly shows the advantage of sufficient moisture about the roots of the trees, as well as during the growing season.

Lot Number	Number trees, 1916	Number dead trees, 1919	Number severely injured trees, 1919	Number healthy trees, 1919	Average growth (inches)	Average per cent soil moisture, Nov. 15	Average per cent soil moisture, Feb. 15
1	50	41	7	2	2	14.7	14.2
2	50	16	18	16	9	17.95	19.2
3	50	22	13	13	6.5	15.5	15.1
4	50	7	11	32	15	31.5	33.1

To check the advantages of water about tree roots during the winter, another group of 10 trees standing in prairie sod were selected. Five of these were watered heavily just before the ground became frozen. The other five were left unwatered. Of the five unwatered trees, three failed to start growth the following spring and the other two managed to start, but added only an average of one and one-half inches of growth per year for two years, then died.

Of the five trees watered all were living at the end of the growing season in 1919 after four years of fall watering and had made an average annual growth of five and one-fourth inches.

The results of these experiments clearly demonstrate that in the northern Great Plains Area, summer culture is positively needed and that in very dry seasons fall watering or irrigation of some sort is not only advantageous but necessary.

A glance at the table shows a direct

(Continued on page 24)

## Cletrac TANK-TYPE TRACTOR



Wheels on a track—the Cletrac way—take less power

## Better Cultivation With a Cletrac

**C**LETRAC cultivation is clean and thorough—brings better fruit and bigger profits. This hardy tank-type tractor rides lightly over the soft soil without packing or "digging in." It keeps the surface mulch deep, rich and moist.

Low set and smooth, the Cletrac slips under branches and works close to trees without damage. Short, quick turns put all the ground under cultivation. Engine speed can be changed to suit the job and a special water air-washer protects the motor from dust.

A Cletrac in your orchard means better work, fewer hands and more fruit. See the Cletrac dealer near you or write today for your copy of "Selecting Your Tractor."

**The Cleveland Tractor Co.**

"Largest Producers of Tank-Type Tractors in the World"  
18935 Euclid Ave. Cleveland, O.

## BEEES

BEEES are a money making asset on any farm, bringing annually a far greater return to your table and at the market than they cost in care and expense. Do you know the Twentieth Century methods?

Buy **PRODUCTIVE BEE KEEPING**, learn how to make a beginning and how to see it through. It gives the methods found to be the best money makers by extensive honey producers. The illustrations give in pictorial form all that is needed to explain the text.

**PRODUCTIVE BEE KEEPING**, by Frank C. Pellet  
135 illustrations, 316 pages. **\$2.50**  
Handsome cloth, postage paid

## INSECTS

Destroy billions of dollars worth of crops. Fruit growers will learn how rabbits and mice in the orchard and how to spray and fumigate in **INJURIOUS INSECTS AND USEFUL BIRDS**. Poultrymen will find preventive measures against chicken lice and mites. Professor Washburn has had 21 years of experience in economic entomology and applied zoology. His knowledge is ready for you in this volume with 436 pages.

**INJURIOUS INSECTS AND USEFUL BIRDS**, by F. L. Washburn  
Cloth binding, postpaid **\$2.50**

**American Fruit Grower**

STATE-LAKE BUILDING CHICAGO, ILL.

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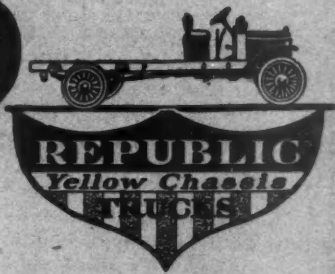
## DRY YOUR FRUIT

and Vegetables by steam in two hours on the "Deacon" Evaporator. Cheaper than canning—No jars—No sugar—Less work—No loss—Cost \$5.00 up. Send for catalog D. **EASTERN MFG. CO., 350 S. 4th St., PHILA., PA.**





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Service—nation-wide service—has helped win for Republic the greatest truck preference in the world. Two thousand authorized service stations, and seven factory-maintained National Parts Depots, assure Republic owners everywhere uninterrupted truck performance.

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## WHITE TRUCK Hauls Prize Apples to Market

**G**RANT G. HITCHINGS, proprietor of the Onondaga Fruit Farm, near Syracuse, New York, contends that the two items which have contributed most to his success are the telephone and his 2-ton White Truck.

"The telephone keeps me in touch with my market," says Mr. Hitchings, "and the truck gets my fruit there at top prices and in prime condition."

"Those two—the telephone and the motor truck—are the best assistants an enterprising farmer could hope to find." Mr. Hitchings says that his White truck more than paid for itself in its first two years by enabling him to take advantage of high market prices.

The Onondaga Fruit Farm produces apples of 108 varieties. They were awarded gold medals at the Panama-Pacific Exposition in San Francisco, and for 20 years they have been consistent winners of blue ribbons at county fairs and New York State fairs.

In 1918 the output of the Hitchings trees was 10,000 bushels of fancy apples, all of which the White truck hauled to Syracuse. In addition, the truck enabled him to take to market 2,000 bushels of "culls"—apples which had fallen from the trees or which could not be graded as "perfect," but which were valuable for cider making—at a profit of \$2,000.

"A farmer," says Mr. Hitchings, "shouldn't buy a motor truck just because its first cost is low, any more than he would buy land just because it is cheap. Cheap land is mighty likely to prove unproductive and a low first cost truck is equally likely to be pretty expensive in repairs and delays."

"I regard the buying of a White truck just as I would the buying of a fruit farm that I know to be productive and satisfactory in every way."

THE WHITE COMPANY  
CLEVELAND

## Looking Back on 1919 Peach Season

(Continued from page 20)

in peaches, but was later identified as the oriental peach pest. No doubt a spray of arsenate of lead might have prevented this, but the lateness of the attack makes the application of a spray undesirable as it would detract from the value of the fruit.

### Market Conditions

Owing to a shortage of sugar the market for early varieties was not very encouraging, when the high prices of labor, packages and transportation are considered. However,

toward the end of the season the market began to look up. On the whole, the season was quite successful from the money standpoint, even taking into consideration the loss due to weather conditions and disease.

### Packages

A great many growers undertook to make use of the bushel basket, because of the high price of Georgia carriers. Opinions vary as to the success of the former. There is no question that it would pay the growers to ship in this package the inferior grades of fruits, especially in seasons of heavy crops and low prices. There is a great advantage in the use of the basket in that it requires very little skill to fill, rack and apply the cover. However,

the general consensus of opinion seems to be in favor of the carrier for the fanciest grades of peaches.

### Spraying and Dusting

The comparative value of liquid sprays and dust is still a subject much discussed. It is conceded that for the summer applications, a dust is about as effective in controlling scab and brown rot on peaches as the liquid spray. There seems to be no question that dormant application should be in the form of a liquid. It is believed also that where brown rot cankers are present the use of a liquid spray is preferable. Under all other circumstances, thorough dusting gives apparently as good control of scab and brown rot. A little more expensive as

to material, it is true, but the speed with which the work can be done with a duster will overbalance in saving in time and labor the difference in cost of materials. However, the keynote is thoroughness of application at the proper time, both in spraying and dusting.

## Apple Blotch in Ohio

(Continued from page 20)

material. That means that the trees must be sprayed from the inside out and from the outside in. When sprayed only from the outside, the blotched spots are invariably on the side of the fruit toward the center of the tree. In one case the only blotched areas were on the top side of the top-most apples, showing that they had not been perfectly covered from the ground.

Of the four sprays, two were for blotch alone. The first was made to coincide with the usual "10 days after" spray, the 10 days being extended to two weeks and the fourth occurred in conjunction with the summer spray for the second brood of codling moth worms. Presumably, but not certainly, fewer sprays may suffice where lesser infection is present or where the infection has been reduced through the previous year's efforts.

Pruning out cankered twigs not only reduces the number of sources of infection, but also opens up the tree so that more thorough spraying may be done. These reasons are both important.

Apple blotch not only results in malformation and disfigurement of the fruits, but it causes a considerable drop throughout the season. Trees sprayed for blotch invariably carried much larger crops at the end of the season even though the set in the spring appeared substantially the same.

The commercial varieties most affected in Ohio are Smith Cider, Duchess, Maiden Blush, Ben Davis, Mann, Stark, Northwestern, Greening and a few others. In some sections, it is known as Smith Cider "scab." Our Rome Beauty is troubled to some extent.

Apple blotch will continue to be a serious trouble here in Ohio and growers who now have but a slight amount of it should take measures to control it before it gains too much headway. One season's control will not be enough as the holdover cankers have the power to reinfect an orchard the next year. Thorough spraying must be done for several years before it can be eradicated.

It appears that this disease, however, like nearly all others to which all fruits are subject can be fought with sprays with hope on the part of the grower of enjoying practically complete control.

## Winter Killing

(Continued from page 22)

co-ordination between the amount of moisture in the soil and the number of living or healthy trees. In the prairie sod but four per cent of the trees were vigorous while in the plot clean cultivated and fall watered there are 64 per cent of the trees healthy and vigorous.

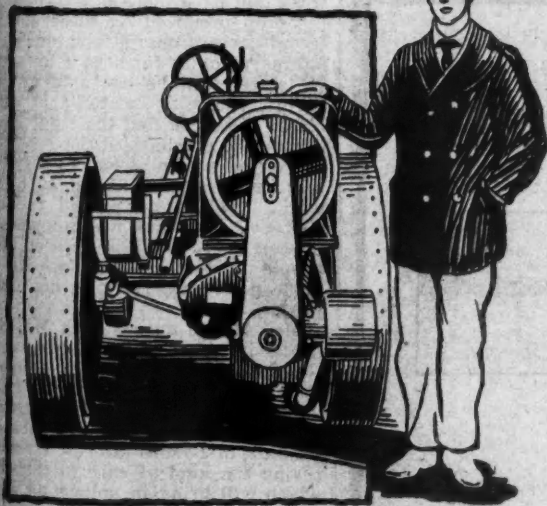
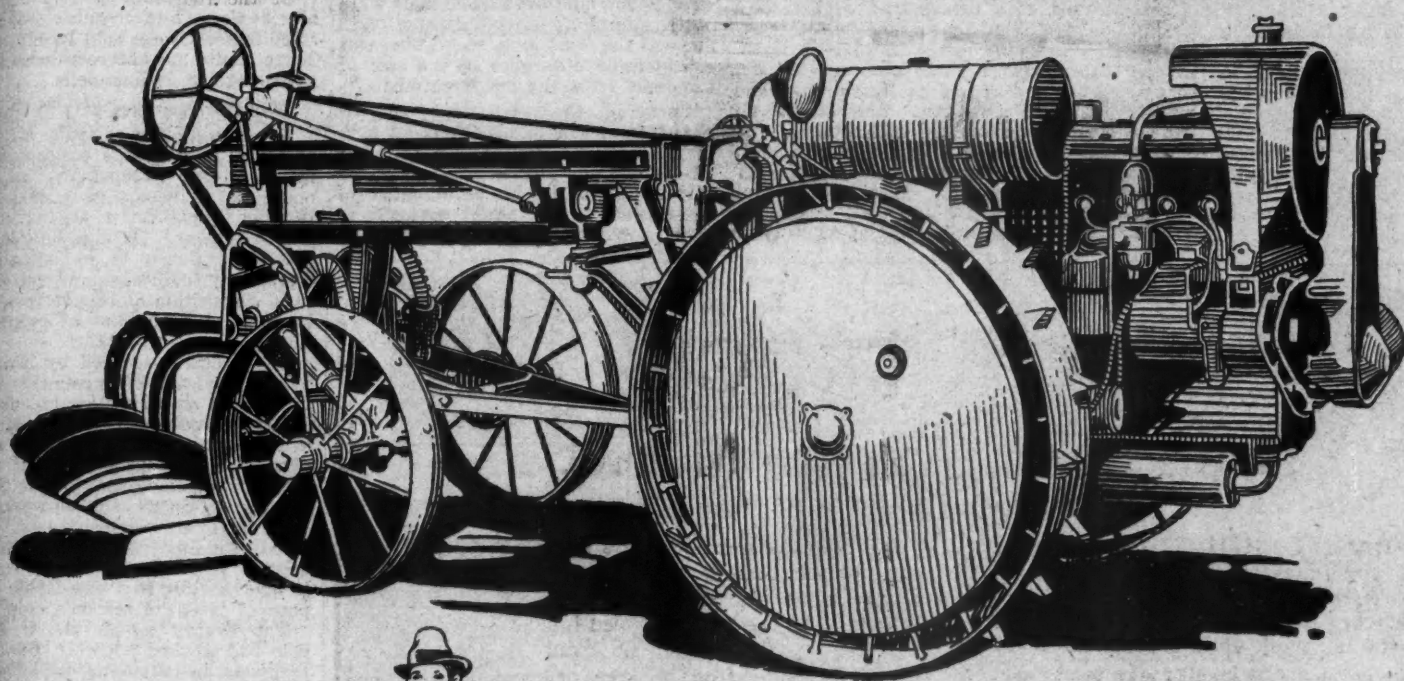
Plot three with a cover crop shows a loss of 38 per cent as compared with plot four, which was clean cultivated and fall watered. Plot three also shows a loss of six per cent as compared with plot two, which was just clean cultivated. The cover crop in this case seems to rob the trees of needed moisture. The amount of moisture in the soil during the fall and winter seems to be very largely the controlling factor, both as far as number of live trees and the annual rate of growth are concerned.

If every farm home in this district would clean cultivate a few fruit trees during the summer and water them in the late fall, there not only would be a larger number of living trees in the farm orchard, but these trees would make a much more rapid and vigorous growth.



# MOLINE

## Orchard Tractor



The top of the radiator of the new Moline Orchard Tractor is just 54 1/4 inches from the ground. Wheels are 44 inches in diameter. Clearance 18 inches. Weight, 3380 pounds.

THE insistent demand from orchardists all over the country who approve the principle of the Moline-Universal Tractor has led to the construction of the Moline Orchard Tractor.

It is simply the regular Moline-Universal Tractor built lower down, enabling it to work close to the trees and under low-hanging branches.

One man handles both tractor and implement from the seat of the implement—the only logical seat of operation for good work. The entire outfit backs as a unit, a feature of particular value and convenience in orchard work. All implements that can be used with the Moline-Universal Tractor can also be used with the Moline Orchard Tractor.

The regular Moline-Universal Tractor engine is used, which has developed 20.05 drawbar h.p. and 30.68 belt h.p. under strictly official and competitive tests.

Low-down and compact—it is built for business and does the work. Early orders are already being filled.

## Moline Plow Company, Moline, Illinois

Atlanta  
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Kansas City  
Omaha  
Minneapolis

Jackson, Mich.  
Sioux Falls  
Des Moines  
Bloomington, Ill.  
Memphis



## Neglected Orchards Reclaimed

### A Season of Good Care Makes Sweepstakes Winner

**I**N TAKING over four neglected farm orchards, E. A. Doud of Cory, Ind., produced a commercial crop of 4,000 bushels of apples in 1919. These were of sufficiently high grade that he took a sweepstakes premium on three baskets of Winesaps at the Indiana Apple Show at Indianapolis. He demonstrated that many farm orchards can produce profitable crops if they are given an opportunity to develop their latent powers. Mr. Doud accomplished this in a year when many commercial orchards were non-productive due to late spring frosts and wet weather during the blooming season.

Mr. Doud knew something of the possibilities of the orchard business, his brother being the producer of the "Miami Brand" of apples grown near Denver, Indiana. In February, 1919, he attended a fruit grower's short course at Purdue University and while there he met and talked with about 40 of the state's most progressive

fruit growers. After talking to them he determined to lease an orchard as soon as he could locate a suitable one.

To aid him in locating a good orchard proposition he sought the help of C. L. Burkholder, extension horticulturist at Purdue whom he knew to be acquainted with some of the older orchards of the state. "I spent several days with Mr. Doud," says Mr. Burkholder, "in going over the orchard prospects in Clay county. I had attempted to get these men interested in caring for their orchards, by means of a demonstration, but they did not seem to enthuse in the least. However, they were 'tickled to death' to turn over their orchards to Mr. Doud, and he took on four or five, one of about 600 trees, the others all smaller farm home orchards."

"The success of my orchard undertaking was far above my own expectations," said Mr. Doud. "The four orchards I leased had never been cared for. They contained about 1,000 trees

from 10 to 20 years old, the principal varieties being Winesap, Grimes, Rambo, Ben Davis, Jonathan and Gano. We removed all the dead limbs and gave the trees a moderate pruning to let in the sunlight."

Mr. Doud heard, with great interest, the other growers discussing at Purdue the success they had had with nitrate of soda on older trees that stood in sod or on poor soils. He also learned that they had not had very much success in its use on trees that were cultivated. He decided to use nitrate. He added: "We used nitrate at the rate of five pounds to the tree and in some cases as high as seven pounds to the tree and secured excellent results. We left a few trees without nitrate and the leaves on these trees were yellow and weak. The buds were not so plump as on the nitrated trees nor was the fruit so large. There was considerable difference in the size of the fruit from the two treatments."

Spraying, the most important orchard operation in bringing old neglected orchards into production, came in for its fair share of attention on Mr. Doud's part. He secured one of the largest triplex power sprayers so that he might be assured of ample ca-

capacity to do thorough and effective work. He recognized that the high cost of a sprayer might mean the low cost of apple production. He applied four sprays and would have used more had his materials arrived on time. He was successful in getting on the first, second, third and fifth sprays and during last season he found this program successful.

Two of these orchards were cultivated with a reversible disk and two were mulched with straw, to conserve moisture. Mr. Doud states that, "The straw proved to be the better treatment last year on account of the drouth."

The orchards produced from 330 to 1,956 bushels of fruit each. This meant practically four bushels per tree, the total being 3,859. These were all sized over a mechanical grader and 1,850 bushels were sold locally and in Terre Haute and the remainder placed in storage in Indianapolis.

#### Won Sweepstakes with Winesap

As an exhibitor of fruit, Mr. Doud had had no previous experience, yet he won the sweepstakes on three bushels of Winesaps in baskets at the Indiana Apple Show at Indianapolis last November. Besides, he won other premiums there, 17 in all, and his fruit went to the Mid-West Horticultural Exposition at Des Moines, Iowa, to help swell the list of prizes that Indiana apples won there.

"The results secured by Mr. Doud will be a means of encouraging other farmers to care for their orchards," is the opinion of Mr. Burkholder. He says of his part in helping to locate the orchards and his assistance during the season, "I believe that this is the finest piece of demonstration work that I could have interested myself in as Mr. Doud is going ahead with the work another year enlarging it and planning to open a store in Terre Haute to dispose of his next season's crop."

The county agent, H. E. Abbott, who had worked with Mr. Burkholder and was instrumental in helping to work out Mr. Doud's leases, finds that the crop produced on these old, neglected farm orchards is arousing the interest of other farmers in his county. He states that he has another group of orchards well located that can be leased if he can find the right kind of a man. He emphasized the importance of getting a man of energy who knows how and was not afraid of orchard work. "Mr. Doud proved to be an energetic and hard working man and he certainly won the respect of the people in this community. He also made good financially on his orchard work."

Mr. Abbott agrees with Mr. Burkholder in his estimate of the value of this kind of orchard work as demonstrations. If the county agent can get good men to take care of old orchards as a business he will have solved the problem of how to interest farmers in giving the kind of care to their trees which will bring in dollars as well as fruit for the home.

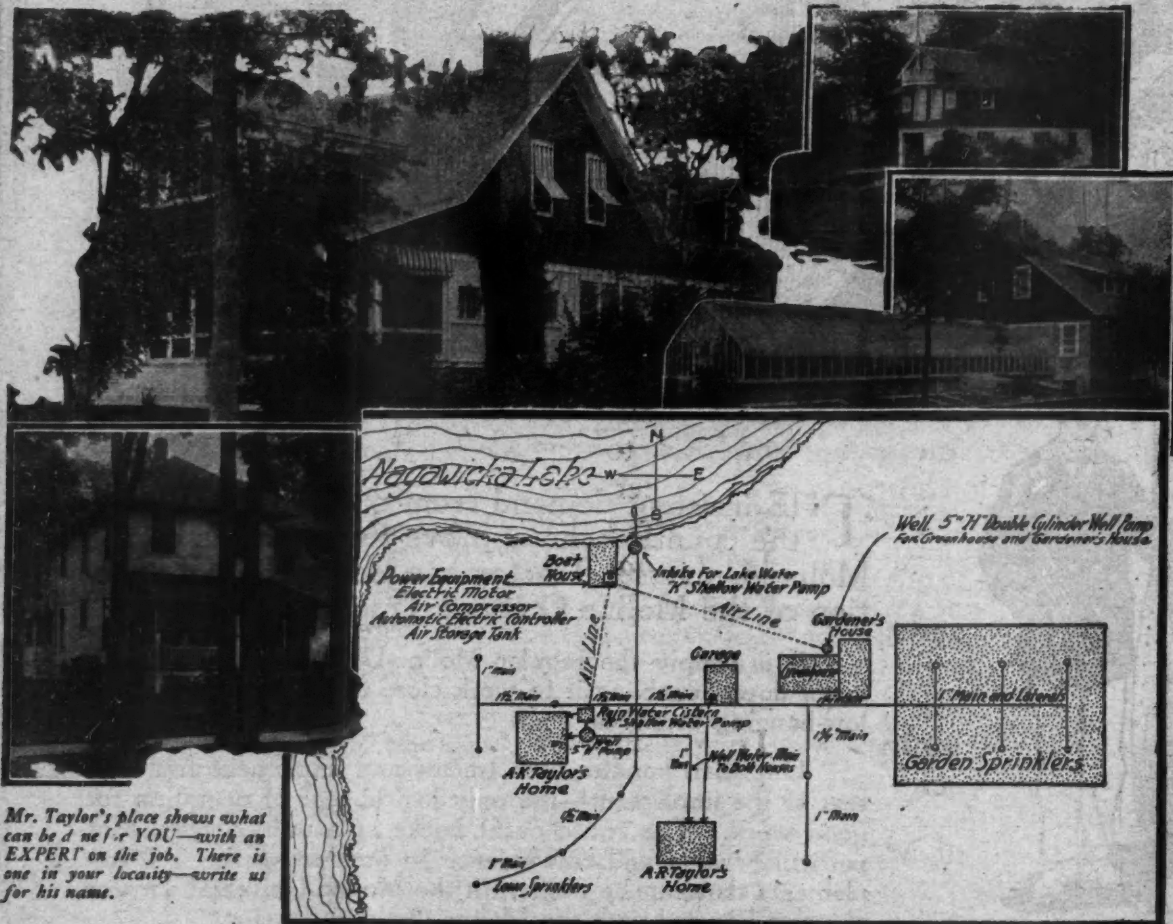
There are many neglected farm orchards in the middle west that will produce equally satisfactory crops of those Clay county orchards did. The difficulty is to find the man that will take the right kind of care of them.

Bee diseases cause great losses to beekeepers, but poor wintering and insufficient stores take a heavy toll.

Wisconsin takes first rank among pea canning states, having packed about half of the total pack of the past year.

Now is the time to take out the canes from raspberry patches. Burn them at once, then spray the canes with lime-sulphur.

Meadow mice are reported as increasing the extensive nurseries in the vicinity of Rochester, N. Y. In 1918 there was a similar scourge of mice which at that time destroyed thousands of dollars' worth of nursery stock. Nurserymen have troubles, too.



Mr. Taylor's place shows what can be done for YOU—with an EXPERT on the job. There is one in your locality—write us for his name.

### Mr. A. K. TAYLOR writes:

"In July, 1912, I had the Milwaukee Air Power Pump Company change the water storage tank at my country place at Nagawicka Lake, Waukesha County, Wisconsin, to an air reservoir, and put a large pump in an intake well near the lake.

"Today five pumps, operating automatically from that single air reservoir—as I use an electric motor—supply lake water to the

entire grounds and greenhouses, and lake, rain water, and spring water 'direct from the well' to my own, my son's, and the gardener's houses.

"The system has met every expectation. In my opinion it is a great improvement over the storage tank system—and one of its strongest features is that it may be added to from time to time."

Signed: A. K. Taylor

Nothing need be added to Mr. Taylor's letter

THE MILWAUKEE AIR POWER PUMP CO., 902 Third Street., Milwaukee, Wisconsin



EITHER  
OR  
BOTH





# American Fruit Growers

INCORPORATED

Executive Offices, Pittsburgh, Pa.

*An organization engaged in large scale production and  
Nation-wide distribution of fresh fruits and vegetables*

**A** HIGHLY specialized sales service for growers having  
PEACHES, EARLY APPLES, WATERMELONS,  
POTATOES, CANTALOUPEs, BERRIES or any other  
variety of fruits and vegetables.

The sales organization of the American Fruit Growers Inc. is most active in maintaining healthy markets. The fact that the Corporation owns and operates orchards and farms, necessarily makes it use every effort to prevent glutted markets and consequent low prices.

The American Fruit Growers Inc. has built up an efficient marketing machine to sell the products of its properties and of other growers.

The Grower, who lacks efficient marketing facilities is in no position to secure the full value of his product. Therefore the sales service of this nation-wide organization is made available for his use and benefit.

This sales-organization consists of wholesale Branch Houses in five of the leading centers of consumption and car lot distribu-

ting offices represented in leading centers by salaried representatives and brokers in all other car lot markets. These representatives can place your offerings daily before hundreds of car lot buyers and secure you F.O.B. sales.

The Branch Houses are particularly adapted to *Intensive Marketing*, enabling the American Fruit Growers Inc. to sell direct to the retailer, and fruit-stand man by the *package*.

If you have fruits or vegetables to market, take advantage of this sales service. Get in touch with the nearest Branch House or Distributing Organization immediately.

Full information on rates will be forwarded with dispatch. Rates are on a percentage basis and are framed to meet your actual requirements.

## Branch Houses of the American Fruit Growers Inc.

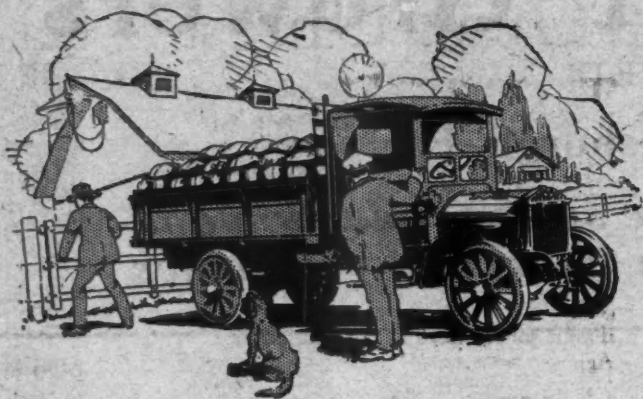
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Crutchfield, Woolfolk & Clore Division	CHICAGO
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Both the truck and body fill every requirement of the progressive fruit grower at *lowest final cost* on short hauls or long.

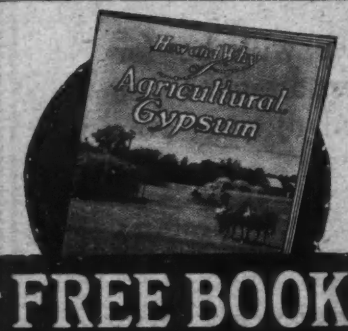
Your name and address will bring by return mail an attractive 32-page book that gives complete explanations and *proof*—almost 100 clear illustrations and non-technical descriptions of important truck features.

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We have barrel factories near enough to you to supply these knocked down barrels at lowest freight rate. Prices are lower now than later. Write for free booklet fully illustrating the Hollingshead Co. method of making barrels from knocked down stock.

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A. B. KATKAMIER

Macedon, N. Y.

## American Fruit Grower Protective League

By Newton Jenkins, Illinois

The legal service furnished in this column to members of the American Fruit Grower Protective League is designed to help fruit growers in their legal matters. Our readers are urged to join this league and avail themselves of the protection it offers.

### Who Should Have the Corn?

Q.—A owns some land which he rented to B in the spring of 1919. B put the land into corn. In August, 1919, A sold the land to C giving C immediate possession. To what part of the corn crop was C entitled? C. M., Nebraska.

A.—C was not entitled to any of the corn. B planted the corn under his lease from A, and is entitled to the crop.

### Disposing of Property by Will

Q.—Which is the better way to dispose of property by will in order to leave the property to an only daughter and the balance to her children after her death? Should the daughter be given the property during her lifetime, and then to have it go to her children, or should the daughter be given her share now, and a trust fund established for the children? Would the estate be settled as well without the clause: "To be settled without the intervention of courts?"

A.—If the property be real estate, then the daughter should be given a life estate in the property with remainder to her children. If it be personal property or especially money, then the daughter should be given her share, and a trust fund established for the children. The clause you mention is improper in a will, for a will must be probated in court.

### Children Berry Pickers

Q.—I grow strawberries and raspberries and employ about 40 children to pick. I would like to learn to what extent I am liable for damages in case of accident? V. S., Illinois.

A.—Farm labor is exempt under the employers' liability act of Illinois. You would not be liable for damages unless in case your own negligence caused injury to the children employed.

### Note on Farm Sale

Q.—I sold a farm on time, taking a promissory note for one year's rent as earnest money. In three months the purchaser moved out. Does the note still hold good? If so, how can I collect? The man has no property, is married and has only a poor paying position. The note has no "backer." E. G. F., Washington.

A.—The note still holds good. To collect it under the circumstances set out by you is a different matter. No note is better than its maker. On holding a note of a man with the above qualifications had better forget it, and credit it up to experience. Perhaps, however, if you presented the note for payment, the maker might pay it.

### Humane Society

Q.—I need some information concerning the humane society in this state. Where can it be obtained? A. M. S., Missouri.

A.—Write to the Humane Society of Missouri, 909 Security Bldg., St. Louis, Missouri.

### No Answer from Order

Q.—On March 22 I ordered nursery stock amounting to \$5.65 from a Michigan nursery, enclosing a postal money order. The money order was cashed, but two letters of inquiry concerning my order have failed to bring a response. What can I do to get the order or my money? J. R. B., Missouri.

A.—Your complaint has been taken up with the nursery and you will be notified direct of the developments.

### Partnership or Lease

Q.—I have some choice land here for fruit growing and am going into the business. I have two tenants who I carry on the work with me. Do you

(Continued on page 34)



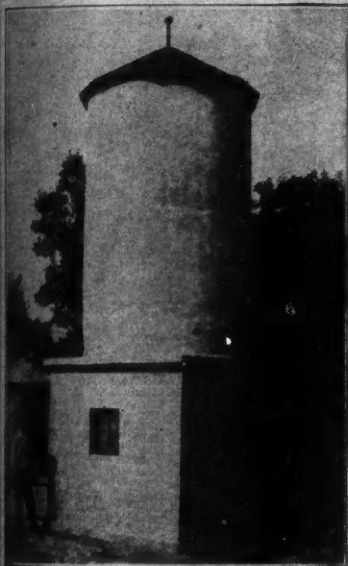
## Water Storage Tanks of Concrete

By Edwin K. Borchard, New York

MANY fruit growers find that they are needing constantly increasing amounts of water to use for mixing spray solutions. Since spray mixing is generally done at a central mixing station and the solution then distributed in carts, it is often found advisable to provide an elevated concrete tank of good capacity for storing a reserve supply of water. Such a water tank in addition to furnishing water for spraying solutions can also provide water supply at the necessary pressure for the various farm buildings. In locating the tank consideration must be given to placing the tank at a proper elevation so as to give sufficient pressure or "head" to the water.

### Concrete Tanks Are Waterproof

Concrete can be made perfectly watertight and will give good service when used in tanks and similar struc-



Splendid Type of Concrete Water Tank

tures. This is evidenced by the fact that there are thousands of tanks, silos and watering troughs built of concrete on farms all over the United States. Of course, more than ordinary care must be given to mixing and depositing concrete which is to hold water, in order to make it dense and nonporous. The proportions used in concrete for this purpose are one part Portland cement, two parts sand and three parts pebbles or crushed stone. All these ingredients must be very thoroughly mixed to a mushy wet consistency which will allow the concrete to be thoroughly tamped and spaced into the forms. Many experienced concrete workers add 1-10th part hydrated lime to the other ingredients in mixing, as this tends to make the concrete more plastic, so that it will flow into the forms better and become very dense.

For a medium sized tank similar to that shown in the illustration, the walls generally are made six to eight inches thick and the bottom, if resting on good firm ground, is also made six inches thick. If the tank is elevated on supports so that the bottom must be self-supporting as in the tank illustrated, it is necessary to make the bottom considerably thicker and well reinforced with steel rods. Work of this character should be done by an experienced builder.

### Reinforcing the Tank

All concrete tanks for holding water are subjected to a bursting pressure which would crack the concrete walls if they were not reinforced with steel rods in the form of hoops. These steel reinforcing rods take the place of the steel hoops seen on wood water tanks, except that in concrete construction



these hoops being imbedded in the center of the wall of concrete are effectively protected from rusting or corrosion and need no attention.

For very small tanks it is sometimes permissible to use several layers of heavy wire fencing. The size and number of steel reinforcing hoops depends upon the diameter of the tank and height of water contained therein, and therefore, the work of building a tank or prescribing the amount of reinforcing should be left to an experienced builder.

### Advantages of Concrete Water Tanks

Concrete tanks are watertight; they do not rot or decay, and require no attention. They are windproof and will not open up cracks if left to stand

without filling for a long time. They are reasonable in first-cost and much better than any other type of tank in final cost.

The bulk of the materials—sand and crushed stone or pebbles—can be obtained at little cost in the locality where the tank is built. The tank illustrated holds 170 barrels and is supported by a concrete block pump-house. In this house are located the pumps which supply the tank with water. This tank is located on high ground and is sufficiently elevated to furnish water at a good pressure all over the farm.

Over a million barrels of crude oil are used daily in the United States.

## The Great Unrest

THIS COMPANY believes that one of the most vital problems of the day is that of keeping youth content on the farm. We are passing through a critical period. Industry, wages, prices, all the old familiar standards and forces in our national life, are unsettled and upset.

You need no reminder that the contagion of this restlessness has infected the growing generation on the farms. Thank your lucky stars if your sons believe in the Glorious Future of Agriculture.

Even now the winds of unrest are carrying multitudes from the homeland to the big town. Ten thousand lads, ripe for vigorous country manhood, are responding to the distant glitter that will prove a mirage. An army of boys, forsaking their heritage, are being lost forever to agriculture. In that hopeful journeying to the crowded cities is a national tragedy; for the sake of the nation, and for the sake of the boys themselves, it must be stopped.

What will you do?

Give the young energies and ambitions of your sons the necessary leeway. Give them opportunity at home, give them machines and responsibilities, and time for enjoyment. Make them see behind the false mask of the city, and teach them this Truth: *health, wealth, and happiness are far more certain to be found on the farm.*

## INTERNATIONAL HARVESTER COMPANY

OF AMERICA  
CHICAGO (INCORPORATED) USA

92 Branch Houses in the United States

### TOP-BUDDING THE APPLE

By M. J. Worth, Iowa

In the March issue you answer the inquiry of H. M. D., Penn., by saying that "top-budding would have to be done in midsummer and the bud would stay dormant until the following spring." Your correspondent can bud his trees any time from the latter part of June until the early part of July and obtain a good growth from the buds that season. Use buds from the new growth. On trees that are well established, I get from 20 to 36 inches of new growth from June budding, and expect 98 per cent of the buds to grow. If any fail, new buds can be put in during August, or the trees can be top-grafted the following spring.



## Make Extra Profit In Labor Saved



## Universal Package

**T**HIS package is rapidly becoming recognized as the ideal package for peaches. It delivers to market in attractive shape at minimum cost and brings best net profits. It is strong, easy to handle, low in price. Ideal for all crops. Save repacking. Covers fit on instantly. No nails needed. Center posts give increased protection.



This helpful bulletin free each month—ask for it now.

This monthly Bulletin should be read by every grower and shipper—its valuable aid made useful. Send for it today. Every issue carries information that means better results and better packages. Shows ways to pack, handle and ship without waste—to get best prices—save labor and time. Proven methods shown, questions answered, marketing problems discussed by experts. Explains how to spray—grade—how to select crops for best profits—where to find markets. Free advice by experts on growing, packing and marketing, backed by service of PSC field representatives covering entire nation. Ask for further details. Mailed each month free—mention how many trees you have.

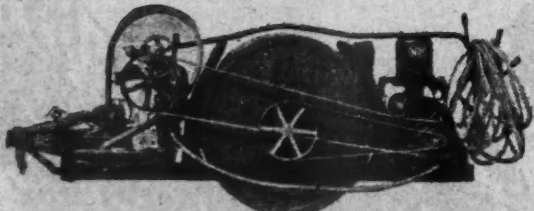
## Package Sales Corporation

104 N. Jefferson Street

SOUTH BEND, IND.

## VAN FLEET ROLLER SPRAYER

Gives Efficiency-Economy and Satisfaction in Spraying Operations



1920 Model—Left-hand side, showing transmission, idler, agitator pulley, etc., on Style "C" outfit. Filler pump shown in front of spray pump.

Send For Circulars Giving Full Information

One horse can pull a 150-gallon outfit with ease; two horses a 200 to 300-gallon outfit.

Tractors can pull from 400 to 1,000-gallon outfits. It is only with this type of Sprayer that large capacity outfits can be operated successfully without damage to the roots or limbs of trees. We make any size desired.

Satisfaction Guaranteed

THE VAN FLEET COMPANY, Florence Villa, Fla.

## Our Dollar Saving Coupon

The annual price of American Fruit Grower is \$1.00 a year. Why not save one dollar by sending us a three-year subscription for which we will accept \$2.00, or you may send us two new yearly subscriptions at \$1.00 each and get your own subscription one year FREE. USE THIS COUPON and save a dollar.

AMERICAN FRUIT GROWER,  
CHICAGO, ILL.

Enclosed find \$\_\_\_\_\_ for which enter the following subscriptions to American Fruit Grower for the term of \_\_\_\_\_ year

Name \_\_\_\_\_ St. or R. F. D. \_\_\_\_\_

Town \_\_\_\_\_ State \_\_\_\_\_

Name \_\_\_\_\_ St. or R. F. D. \_\_\_\_\_

Town \_\_\_\_\_ State \_\_\_\_\_

Name \_\_\_\_\_ St. or R. F. D. \_\_\_\_\_

Town \_\_\_\_\_ State \_\_\_\_\_

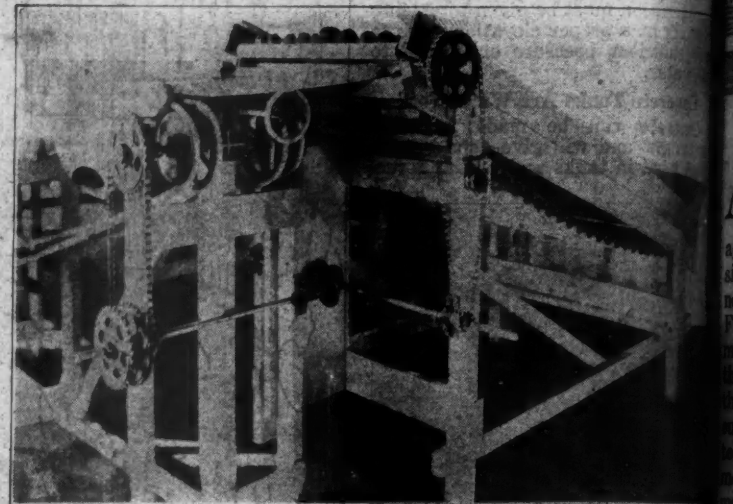
## New Peach Sizer Perfected

**T**HIS year a part of the peach crop may be better graded at less expense than heretofore by use of a new sizer developed by government workers. Two machines were built last year and tested under commercial conditions at Leesburg, Va., and Mayfield, Ga. Information gained through these tests was used in perfecting the present machine, drawings of which are now available to all growers or manufacturers interested, according to announcement by the Bureau of Markets, United States Department of Agriculture.

The machine has several unique features and advantages over existing

with a slight modification of the machine, which is the work of the logical laboratory of the Bureau of Markets, it is stated that the machine has possibilities for grading fruits such as apples, pears, oranges, while it may be possible to modify it to handle sweet potatoes.

An application for a patent on this sizer is pending in the Patent Office, but the department can give assurance that a patent will be allowed on the machine or that some of the elements covered by the application are not already protected by existing



A View of the Peach Grader Machine Designed by Government Workers

types of sizers which make it possible to handle fruit with less bruising, while its construction permits 10 to 15 packers to work at one time, thus making possible a run of from two to three carloads of peaches a day from each machine, the amount depending on the average quality of the fruit. The over-all dimensions of the machine are 24 by 15 feet. It requires an electric motor of less than one horsepower capacity, or a small gas engine, to operate it, and it can be run at half capacity if desired. Under commercial conditions it should be sold at a price not to exceed \$450, according to estimates of the designers.

### How It Works

The peaches from the orchard are delivered on an inclined roller conveyor, on each side of which sorters stand and pick out culls and damaged fruit. The rotation of the peaches on this conveyor, which is obtained without bruising, enables the sorters to see the entire surface of the fruit without touching it. From this roller conveyor the peaches are delivered to two sets of ropes running over pulleys. A simple lever arrangement permits the adjustment of the spaces between these ropes to accommodate any size fruit it is desired to grade. Although the ropes diverge from each other under ordinary operating conditions, they may be set nearly parallel to facilitate the distribution into the bins of fruit which runs almost uniform in size. This control is made possible by a perfected hat-rack movement which is one of the unique features of this machine.

### Grades for Crates or Baskets

As the peaches come off the roller conveyor they roll down a slight incline to the ropes on which they travel until dropped through into canvas bins. It is impossible to congest the machine, because the peaches are fed one at a time to the moving ropes. Some objections to former rope sizers have been overcome through the use of a special coupling device, an idler which serves to keep the proper tension on the ropes and the mechanism which quickly widens or reduces the space between the ropes. The machine, which was devised particularly for six-basket carrier packing, can be used equally well for bushel packs

patents. The bureau has applied for patents on parts of the machine in order to make them available to all. It is ready to furnish a set of working drawings to growers or manufacturers for \$2, which is intended to cover merely the cost of labor and material.

### THE ONLY PRACTICAL METHOD

By A. B. Clymer, Alabama

I was surprised on my arrival in Southern Alabama to take charge of the properties of The Home Gas Land Company in Baldwin county, to find that most of the land was cleared by negro labor, using axes and shovels with which to cut the stumps.

I had been in California and Oregon for several years and in that time had been accustomed to using dynamite for stump blasting. I soon accustom myself to the slow, laborious methods in vogue here and it was long after I landed in the south before the loud cracking and booming of dynamite blasts began to be heard in this region.

We have now cleared about 100 acres of our land and have purchased dynamite in ton lots to get the advantage of the lower prices prevailing on such quantities.

I have also used a good deal of dynamite for the blasting of holes. We used the method I learned in California also. Out there we have the true hardpan, which is impervious to moisture and impedes the root growth.

Here in Alabama we have only a thin hardpan, ranging from three to six inches in thickness, but impervious. Nevertheless I find that the use of a great deal better when this is done. If it is not done, shallow results and while that is to be expected of Satsuma oranges it does do at all for the tap rooted trees being set out in this country.

It is estimated that the growers of the Wenatchee district in Washington will have to pay two million dollars more for paper and nails used in packing this year's fruit crop than was the case by them in 1919.



# The Orchard Home

A Section for Orchard Women and the Children  
 Edited by Mary Lee Adams

## The Sugar Shortage

**A** PERPLEXING position for housewives has arisen due to the coincidence of the fruit season with the sugar shortage. Not only will it be difficult and expensive but perhaps impossible to secure the needed sugar for jams, jellies and preserves. Fruit growers feel the pinch also. The demand for fruit to be used in this way threatens to be small indeed. Last winter the grapefruit growers suffered from the sugar shortage because the grapefruit is too acid for the taste of most people unless modified with sugar, when it becomes the most popular of breakfast fruits.

Canning offers the readiest way out, and if properly done it may tide over the shortage which, according to some authorities, is largely fictitious and will end when refusal to buy at the present prices forces the holders of sugar to place their ample stocks on the market at a more reasonable figure. It is to be hoped that these cheerful ones are right. The peach season brings the opportunity to test the excellence of canning. Last year women who were without sugar canned peaches which they later opened and processed again with sugar. The preserves thus made were of a most excellent quality.

## Do You Own Your Home?

**A** FAR larger proportion of householders own their own homes in the country than in the city, but still some rural communities are half full of rented houses. This is not a good condition. Better have a four-room cottage of one's very own than a large rented house. The only good thing observed to come out of the extortionate rent charged by landlords in very recent times, is that a number of people found they absolutely could not afford to pay rent and so were driven to buy a home—even though in many cases the entire payment could not be made at once.

What a change came over their outlook from the moment they were installed in a place that belonged to them. It is a truism that the renter never does keep up a place as the owner would. This not because of any intrinsic inferiority in the renter, for were the positions reversed, he would likely be the one whose premises were neat and beautified, whose land was not worked to death one season at the expense of next year's yield, whose house was kept in good repair.

"A poor thing, but mine own," sums up our sentiment for the humblest dwelling that belongs to us. Immediately we begin to plan for possible improvements, and sacrifices are cheerfully made toward this end that would not have been endured for the purpose of improving someone else's place. Young couples should, by all means, set out

with the intention of owning their home, and even if they must wait years to carry out that intention, they will surely do so eventually. Then alone will they know the pride of possession and the joy of working out their individual plans together.

## Hard Conditions Shown

**H**OME Demonstration Agents of the State College of South Dakota last year made a survey of the farm homes in four counties. Their findings are surprising. They state that the average working day for farm women in these counties is 15 hours a day in summer and 12 hours in winter. In the four counties only nine bathtubs were reported, but automobiles were used by 88 per cent of the farms. Washing machines, half of them operated by power, were commonly used, but only 15 per cent used modern irons and on 61 per cent of the farms water was carried to the kitchens an average distance of 72 feet.

The long distance record for this was broken by the place where water was carried one-half mile. Think of that, and bless the man whose neglect to install water in the house paved every step of that half mile with backache.

Kitchen cabinets were generally appreciated and sewing machines were in common use. Eighty-three out of every hundred homes used lamps for lighting purposes, nearly 80 per cent used kerosene stoves in summer, and 80 per cent of the homes were heated by stoves.

## Country Life and Health

**T**HAT the country furnishes natural health conditions far beyond the city is undisputed. Why then, with all its natural advantages, has the standard of country health failed to bear the test of comparison with that of the cities?

Judging from all available information on the subject, it would seem to come down to the question of superior methods of sanitation in the cities. They have been prompt to adopt every sanitary improvement as it was developed. The country has failed generally to do so.

Even in the control of such diseases as increase in direct proportion to the density of the population (provided that conditions are otherwise the same), the country is actually behind the cities. Malaria, typhoid, hookworm disease, are fast coming to be regarded as specially dangerous in the country.

Probably the greatest offenders in insanitary surroundings are not the fruit growers. They represent the highest type of farmers, and upon them devolves the duty of setting a worthy example to all agricultural work-

ers. While neglect has much to do with lack of proper sanitation, ignorance also plays its part, and the fruit grower should not only practice but preach sanitation. This would not be purely unselfish, for only as your neighbor conforms to the rules of health can you escape the danger of certain infections.

Remember that the keeping of perfectly clean premises eliminates the peril of hookworm disease. The effectual screening of outdoor toilets, of kitchens and dining rooms from the ingress of flies, will help to control typhoid, while the assurance that drinking water is unpolluted and that milk is absolutely clean, will complete the necessary precautions against this disease so prevalent in rural districts. Malaria cannot be spread by the mosquito if all stagnant bodies of water, however small, are either drained or covered with oil. Plenty of fresh air in clean sleeping and living rooms, will cut down the inroads of tuberculosis amazingly.

## What Is Hospitality?

**S**OME have construed hospitality to mean little else than inviting guests to one's home and trying to impress them with superiority in some direction, generally with the superiority of wealth shown chiefly in elaborate meals. The keynote of true hospitality seems far different. It is more the wish to share with our friends such benefits and blessings as have been given us in our homes. If we feel the necessity of vying with those who are richer than we, we are practically cut off from frequent association with them. In cities this may not make much difference, but a country community is apt to be so limited that we need to keep in touch with all the neighbors we have.

So trite is the idea that the reception we meet with in visiting a home counts for far more than what is furnished in the way of entertainment, that from the time of Solomon it has come down to us that a dinner of herbs where love is, is better than a stalled ox and hatred therewith. A simple repast prior to which the hostess has not wearied herself over a multiplication of dishes, is sure to be a happier event than one where a tired woman forces herself to seem cheerful and animated when in her heart she is longing for just 40 winks on the living-room lounge.

Even if lucky enough to have and to hold a cook, the practice of providing for guests a meal far beyond our everyday fare, is a strain on the purse that we ought not to submit it to, especially in these critical times, and having "spread ourselves" to entertain once we have to refrain for a long time before again indulging in the very real pleasure of entertaining friends under our own roof.







# Better Housekeeping

by Anne Preston

## SAVING TIME AND STRENGTH

IN EACH efficient housekeeper's mind, there is a blissful vision of a home so managed that the machinery which runs the institution smoothly, shall be entirely withdrawn from general observation; that the house, so to speak, shall give the impression of running itself and of accomplishing this wondrous feat to perfection.

The realization of this mental picture implies service other than that given by the mistress of the house alone. It is no doubt delightful for family and guests to rise up in the morning, to sit down to meals and to retire at night without intrusion of the thought that their wife, mother or hostess must have been very active to have that appetizing breakfast and the evening meals, ready for their enjoyment. That she must be an early riser indeed, if they find the living rooms swept and garnished when they first appear in the morning. That ere they may retire in fresh aired, spotless rooms, someone they care for must surely have bent her back to smooth that restless bed, and to chase the ever miraculously accumulating dust from the corners.

### Machinery in Place of Servants

When house servants are to be had, much, but not too much, may legitimately be placed in their care. Where the wife, perforce, does all the housework, she must try to make up for the deficiency in numbers of hands, by the employment of all the labor-saving machinery that it is possible for her to secure. It is sound economy to invest in such useful appliances as enable one person to do the work of two or three, and though there is little doubt that most of the modern labor-saving devices were invented to satisfy the demands of the women who do their own work, yet now the wise housekeeper provides, so far as possible, the same devices for her cook and maid as she would for herself if the actual labor fell upon her own shoulders.

Unless you are a very rare human being indeed, you know that being hot and tired does not tend to evenness of temper. Hence, no doubt, the accepted fact that cooks are regrettably hasty tempered. Naturally they would be if forced perpetually to perspire over a hot stove. Put the ill-tempered cook in front of a gas or electric range, and her disposition will improve as much as your own would do under improved conditions. How far pleasanter it is to deal with persons of unruffled mood, and if that person happens to be yourself, you need no telling of the lack of joy derived from one's own company when irritability has followed in the train of domestic trials and discomforts.

Investment in modern conveniences that make for ease in accomplishment of household tasks and for the comfort of the entire family, are being more and more urged upon women. Nor is it merely the manufacturers and sellers of these things who urge such investment. Those who have made surveys of farm homes, and who have studied the lives of the women who keep them, know full well that when they put in a plea for such improvements, they have said a good word for the happiness and health of an entire economic group—the smallest to be sure, but none the less fully as important as any other—namely the individual household.

### Get Things That Help

Very homely and carrying a tinge of sarcasm, but wise withal, is the saying, "If you can't be easy, be as easy as you can." If you can't install every

improvement you wish all at once, consider those that come within your means, and don't hesitate to stretch those means a little just as your fruit-growing husband does when he takes the momentous step of introducing a tractor into his orchard. Among the few things that by stretching the family purse you might secure, pick out the one that will save you most fatigue and worry.

If you are among the still too numerous housekeepers who have to carry water into the house, place that first upon your list of needed improvements. If water must be carried even a short distance to the house, certain consequences are sure to follow. Never mind how dainty the inmates' feelings may naturally be, it is pretty certain that there will not be so many baths taken as hygiene requires. The dishes will not be washed in the pleasing abundance of water that leaves the dishpan greaseless. The floors will not be mopped as often or as lavishly as becomes them.

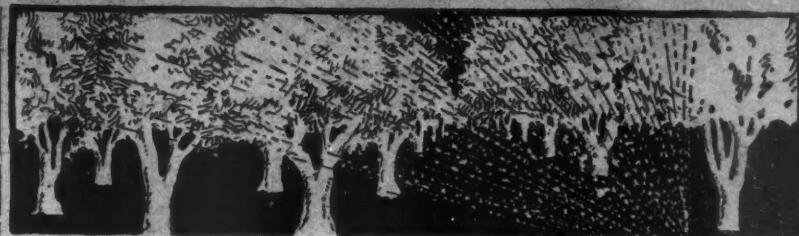
After solving the water problem, set out to add at least one labor-saver to your household appliances whenever practicable. But never deceive yourself into thinking that machines, however ingenious, can take the initiative and organize a household as it should be done. There is a little labor-saving device with which every woman is gifted by nature that can be of more service to her at a real saving of time and money, than anything she could invest money in. We mean common sense. Don't despise it because it is common. Exercise it, cultivate it, work it so hard that you get out of it the best there is in it. Make it aid you in planning your work methodically so that no precious effort may be lost nor time wasted.

### Interruptions

There are many articles written on the proper conduct of a home, that seem to assume a woman can portion out her day as accurately as a man can set a certain hour for a specified task, but this is not the case. Some allowance must be made for the baby crying at the inopportune moment, for the unexpected caller, for little Bobbie falling into the mud muddle during the sacred thirty minutes devoted to sweeping.

But allowing for every contradictory happening, it is not only possible, but most advisable to have some system as complete as you can make it, for doing certain things at certain hours in simple ways. We visited a friend last week whose house is always fresh and bright and, above all, "homey," but who often looks as if she needed a good rest. Monday morning came with its demand for much fresh house linen—sheets, pillowcases, etc. The linen closet was much too far from the scene of operations, being on the floor below the bedrooms. The closet itself was overcrowded, which may have accounted for her being unable to find any two pillowcases to match. The search for these occupied her mind to the exclusion of sheets until the actual making of the beds suggested another trip to the linen closet. Down she went, and up she came with the right equipment of fresh sheets, but a final trip—the third—was made for towels, dresser scarfs and so forth. Three trips instead of one and considerable time wasted where a moment's thought would have avoided much trouble.

In trying, therefore, to better home conditions for work, do not neglect the most obvious remedy which lies entirely within your own control. Do what you must in the most direct and simple way and save duplication of effort.



## Better Sprayer Power Means Bigger Profits

The thorough spraying required for better fruit and bigger profits depends on steady, even power. So better fruit growers know their sprayer power is vital to their profits. They know that extra profits depend on their sprayer engine.

The Air-Cooled, Multi-Purpose

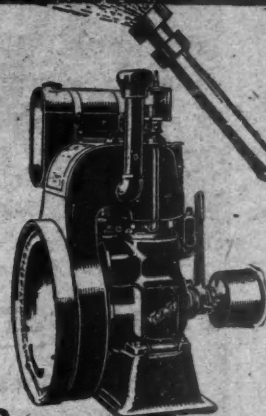
**"New-Way"**

5 Engines in 1

### The best sprayer engine

Thanks to its automobile float-feed carburetor the "New-Way" gives a steady, even power flow for uniformly thorough spraying even on steep hillsides. It never stalls or breaks down. Has dependable Bosch magneto ignition. All water cooling difficulties are ended; the "New-Way" is air-cooled—indefinitely superior. Absolutely the lightest weight heavy duty engine ever made complete and ready to run. Burns gasoline or kerosene.

The "New-Way" has always been the most dependable sprayer engine. This final "New-Way," an entirely new model, tested and adopted by the Government itself just as the Liberty Motor was, is amazingly superior. Learn its story. Learn the countless extra values it brings. Has excessive construction strength for lifelong service. Does all farm work up to 5 h. p. Write for our folder F-20, giving full description and profit-making suggestions.



**THE "New-Way" MOTOR COMPANY**

LANSING, MICHIGAN, U.S.A.

The "New-Way" Goes and Goes Right on Gasoline or Kerosene

## FRUIT GROWERS!

### Make More Money

From Your

### TREES and CROPS

By Using a

### CRESTLINE SPRAYER



### A Few Facts

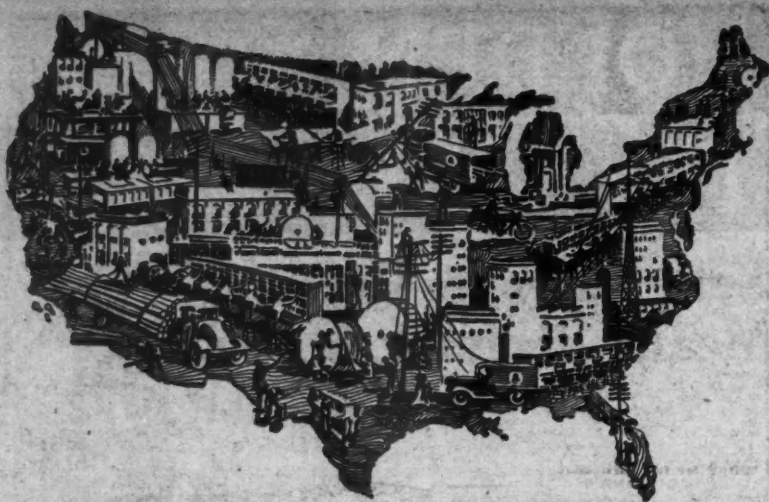
### About CRESTLINE SPRAYERS

The Midget Whale Sprayer after extensive and exhaustive tests is now offered to the fruit and vegetable grower throughout the world. It is well balanced throughout and meets the needs of the large and small fruit grower alike. The Midget Sprayer is so constructed that power is transmitted to the pump by cut gears which operate the pumps at 92 revolutions per minute. This machine is guaranteed to maintain 150 pound pressure. The engine is air cooled and equipped with automatic starter.

Write for Free Booklet Immediately

**CRESTLINE MFG. CO., Dept. K, Crestline, Ohio, U.S.A.**





## The laborer is worthy of his hire

All service is worthy of its hire and good service cannot be continuously obtained unless adequately rewarded.

From the beginning of telephone history the American public has received the best telephone service of any country in the world. In proportion to the service rendered the people have paid less for this telephone service than any other country in the world.

The reason why the American people have received the highest type of telephone service at the least proportionate cost is because the Bell System has been operated on a scientifically economic basis.

Every device which inventive skill, engineering ability, labor and time saving talent has been able to create; every efficiency known to buying, operation, executive control and financial conduct has been employed.

Public service companies feel the high cost of living as well as individuals. Pay them enough to make possible their giving good service. There is no permanent saving in poorly paid service.

In this land of opportunity none of us is willing to jeopardize his success or happiness by stinting the payment necessary to secure the most healthful and efficient service.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

## Protective League

(Continued from page 28)

advise a partnership arrangement or a lease to the tenants? What would be a fair distribution of the proceeds? C. A. S., Ohio.

A.—It would seem that a lease containing all of the terms of your agreement would be better than a partnership agreement. Partnerships often prove embarrassing to all parties. You are on the ground and are in better position to determine among yourselves what is a fair division of the profits or losses.

### Questions About Wills

Q.—1. How old must a person be to make a valid will in this state? 2. Are any other qualifications required? 3. How many witnesses are required? 4. A man died leaving a great deal of property, and instead of leaving it to his children, a will was produced showing it was left to a cousin who had visited him during his last months and influenced him to make his will. He had always told his children the property would all go to them and had frequently advised what disposition should be made of certain things. Now this cousin will get practically everything under his will. He was very sick when the will was prepared. What do you advise? R. P. L., Illinois.

A.—1. The statutes of Illinois require that a male person be twenty-

one and a female eighteen years of age to make a valid will. 2. The testator must be of sound mind and memory. 3. Two witnesses are necessary. 4. If there was coercion or undue influence you can have the will set aside. This is a matter of such importance that you should go to some good lawyer in your county and have him advise you. It is difficult and technical to break a will, and you need good legal counsel there on the ground.

### About Oil Stock

Q.—Numerous agents of oil companies have been pestering the farmers around here to buy oil stocks. How do you regard such investments? R. P. C., Pennsylvania.

A.—Hold on to your money. There are plenty of good securities such as government bonds to put your savings into. You don't have to take your chances on wildcat schemes. It is better to be safe than sorry.

### Pedigreed Hogs

Q.—What is the proper way to handle a man who is doing crooked work in reference to pedigrees in hogs? N. M., Missouri.

A.—Take it up with the record association of the breed in question presenting all the facts. The various breed record associations are anxious to drive out every trace of deception and fraud.



No. 3276. A Dressy Dress for the Matron—The waist is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt is in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. The width at lower edge is 1 1/2 yard. The tunic is especially becoming to stout figures, since it gives height to the figure.

As here portrayed foulard in blue and tan is combined with white organdie embroidered with blue and tan floss. To make the dress for a medium size will require 7 1/2 yards of 40-inch material.

No. 3257. A Pretty Dress in Over-Blouse Style—It is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size will require 2 1/2 yards of 27-inch material for the bodice or underwaist, and 5 1/2 yards

for the dress. The width of the skirt at its lower edge is 1 1/2 yard.

Printed voile and batiste are combined in this instance. Taffeta, satin, gabardine, poplin, linen, shantung, organdie and lawn are equally attractive for this model.

No. 3266. A Becoming Play Dress—It is cut in 4 sizes: 2, 4, 6 and 8 years. A 4-year size will require 3 1/2 yards of 27-inch material.

Checked gingham, striped seersucker, spotted percale, pongee, poplin, drill, linen and crepe are good materials for this style. As here shown blue and white gingham is combined with white linen, and tiny frills of the gingham.

No. 3280. A Cool Dress for Warm Days—Is shown in this illustration. It is cut in 5 sizes: 2, 4, 6, 8 and 10 years. A 6-year size will require 2 1/2 yards of 36-inch material. The dress may be finished to slip over the head, but shoulder closing is arranged for in the pattern.

No. 3279. A Pretty Bolero Dress—Is portrayed in this design. It is cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size will require 3 1/2 yards of 36-inch material for the dress, and 1/2 yard for the bolero.

Embroidered flouncing, organdie, bordered materials, Swiss, dimity and chambray are good for this style.

### CATALOGUE NOTICE

Send 10c in silver or stamps for an up-to-date spring and summer 1913 catalogue, containing 550 designs of ladies', misses' and children's patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating 30 of the various simple stitches) all valuable hints to the home dressmaker.

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# The HOUSEKEEPERS EXCHANGE

by Edith Randolph

We will pay \$1 each for helpful suggestions which will save time, money or strength in all sorts of housework. None save original ideas can be accepted. Unaccepted manuscripts will not be returned unless an addressed, stamped envelope is inclosed. Address "Housekeepers' Exchange," American Fruit Grower, Chicago.

To keep raisins and currants from sinking to the bottom of a loaf of cake, put them in a dish and set it on the back of the stove. Stir them occasionally and see that they do not burn. When thoroughly heated add them to the batter.

A. H., North Dakota.

Clean white rubbers with kerosene. They will look whiter than new. Often one can buy shop-soiled rubbers cheaply. Buy and clean them with kerosene.

A. J. S., New York.

A good way to mend a linen tablecloth that has become thin in places, is to thread a sewing machine with fine thread, loosen the tension and lengthen the stitch. Now place the worn spots under the needle, lift the presser bar and with both hands work the cloth back and forth, sewing over the entire thin surface. When washed and ironed it will hardly show.

Mrs. A. G., Wisconsin.

The inconvenience of having windows freeze down in winter is often a serious annoyance in a country house and may be avoided by soaking the

outside sill in strong brine in the fall. Boiling clothespins in brine will likewise save inconvenience in bad weather.

D. R. G., Connecticut.

To remove mildew, dip the article in buttermilk and lay in the sun to bleach.

L. M., New York.

Some fruit stains are hard to remove with hot water alone, unless fresh. Many stubborn stains can be removed by soaking in sour milk for a few hours. Then spread in the sun and rub the stained part with salt that has been dampened with sour milk.

H. W. D., Ohio.

To use orange skins to the best advantage, run through the food chopper, add an equal amount of sugar, mix thoroughly and pack (raw) in pint jars or jelly glasses, which should be covered, but require no sealing. This chopped peel, prepared in a moment, will keep indefinitely and its uses are many. A spoonful gives a delicious flavor to puddings or pudding sauces; to cup cake or molasses cake, adds zest to dried apple pie and improves the flavor of many preserves, while the pectin in the peel helps to make the latter set firmly. Lemon and grapefruit skins are preserved in the same way. Once tried, you will never be without them.

D. R. G., Connecticut.

A little sugar of lead added to the wash water will set the color in any fabric.

Mrs. A. J. S., New York.

# The Afgco Cook Book

by Beatrice Holmes

## Sugar Cookies

1/2 cup shortening  
1/2 cup sugar  
1 egg  
1/2 cup milk  
1/2 cup flour  
1/2 teaspoon salt  
1/2 teaspoonful baking powder  
1-6 teaspoonful nutmeg  
1/2 teaspoonful salt

Cream shortening and sugar. Add well beaten egg, milk and dry ingredients sifted. Drop from spoon on greased tin. Slow oven, 15 minutes.

## Waffles

2 cups sifted flour  
2 cups baking powder  
1/2 teaspoon salt  
1/2 cup water  
1/2 cup milk  
3 tablespoons sugar  
2 eggs  
2 tablespoons shortening

Mix dry ingredients. Add milk, water, shortening melted, egg yolk and mix well. Add egg whites beaten stiff. Bake on hot oiled waffle iron about two minutes.

## Oatmeal Bread

2 cups boiling water  
2 cups uncooked oatmeal  
1/2 cup molasses  
1 teaspoon salt  
1 tablespoon shortening  
1 cake yeast dissolved in 1/2 cup warm water  
5 cups white flour  
3 tablespoons sugar

Add boiling water to oatmeal and let stand one hour. Add molasses, milk, salt, shortening, yeast cake and flour. Mix and let rise to double its bulk. Knead well, turn into greased pans, let rise again and bake.

## Meat Shortcake

2 cups flour  
1 teaspoon salt  
1/2 cup milk  
1/2 cup left-over meat  
1/2 cup baking powder  
3 tablespoons shortening  
1 cup milk  
3 cups gravy or thickened meat stock

Make dough as for biscuits of above ingredients. Shape to fit pan in which meat and gravy have been placed. Bake 25 minutes in hot oven.

## Oyster Pie

25 oysters  
1 cup finely minced celery  
1 cup finely diced potatoes  
2 tablespoons flour, salt and pepper  
1 teaspoon chopped parsley  
1/2 cup oyster liquor  
1 cup milk  
2 tablespoons butter  
Place layers of potatoes and celery in bake dish. Place layers of oysters next and lastly a layer of potatoes and celery. Make a sauce of butter, flour, milk and oyster liquor. Add seasonings and parsley. Pour sauce in dish and cover with a pie crust. Bake 45 minutes in hot oven.

## Oatmeal Nut Cookies

1 cup of butter  
2 cups of flour  
1 cup chopped walnuts  
1 cup seeded raisins  
2 cups brown sugar  
1 cup oatmeal  
1 teaspoonful soda  
2 eggs

Mix with the hands and roll into small balls; flatten them out and bake on buttered tins in a slow oven.

## An Old-Fashioned Drink

1 quart cider vinegar  
4 quarts red raspberries  
Granulated sugar  
Pour a quart of the best cider vinegar over four quarts of red raspberries and let them stand for four days. Strain off the juice and to every quart of this add one pound of granulated sugar. Boil for 20 minutes, skimming carefully. Bottle, seal and put in a cool place. This is an old-fashioned drink but very refreshing and a timely addition to the fruit juice drinks now so popular. Best served with crushed ice.

## An Appetizing Salad

1 small can of salmon  
2 sweet pickles  
1 cup celery  
1/2 cup chopped nut meats  
Have the celery crisp and cut it fine. Chop the pickles and nuts. Drain and pick the fish to pieces. Now make a good mayonnaise dressing or any preferred salad dressing. Serve on crisp lettuce leaves.

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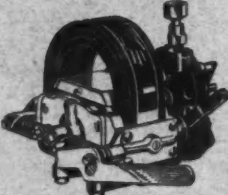




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## Electricity Saves Labor

By E. N. Cable, Ohio

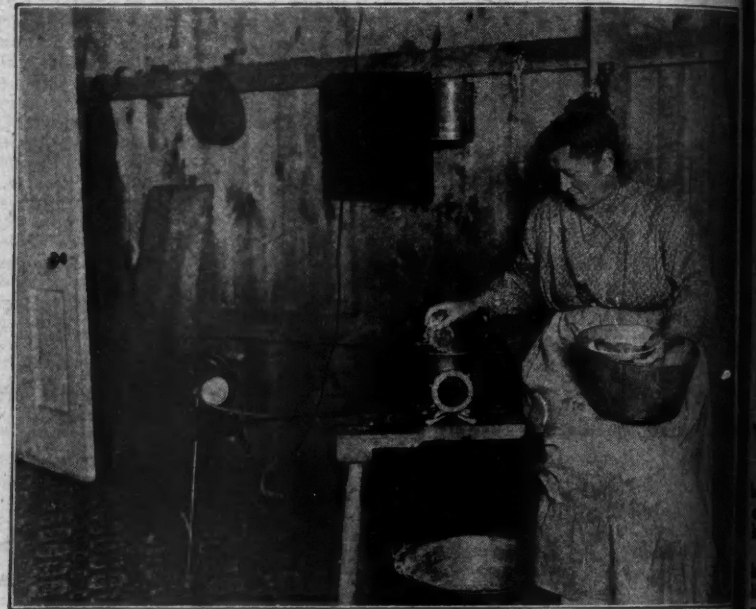
Questions about the installation and use of electricity on the farm are invited. Address, E. N. Cable, American Fruit Grower, Chicago, Ill.

ANY story of farm life will involve, generally, a story of tired wives and mothers. For the wives and mothers get more tired on the farm than any of the rest of those who labor there.

Some husband and father is going to take exception to that, maybe. But before he decides to stir up any considerable argument, let him canvass the situation and determine how many of the possible labor-saving contrivances for woman's work he has provided for his wife. Then let him compare that list with what he has provided to help out in his own labors. He'll be surprised, maybe, to find how many more labor-saving inven-

a modern electric washer that washes and wrings the clothes all with electric power—with no labor by the housewife except to start and stop the machine and to feed the pieces into the wringer. Again washing with electricity means less time actually on the job and very, very much less work.

Ironing: With the old flat iron heated on top of the range or even the gasoline or coal oil stove, it means that the room will be heated up more or less and that a trip from ironing board to stove must be made regularly to change irons. With her electric iron, the farmer's wife can iron right along in utmost comfort, with an iron held at proper temperature and a saving of time. One of the greatest sources of satisfaction among housewives who are using electricity is the electric flatiron.



Operating a Sausage Grinder with an Electric Motor

tions have turned up on the menfolks' side of the farm labor problems than on the women's.

And labor-saving devices are playing a part of ever-increasing importance in farm life today, as they are in other forms of industrial activity.

Many of these labor-saving devices depend upon electricity for their operation or effectiveness and in many farm homes electrical apparatus is being employed with gratifying results.

### Not Only Lessens Labor

For at least two results are bound to attend the adoption of this modern means of getting work done: First, the same work will be done in a shorter time. Second, it will be done with less labor on the part of the housewife. It must follow, then, that the housewife using electricity will have more hours at hand each day, hours which she may devote to additional work or hours in which she may rest or seek that recreation which will keep her young and zestful.

Let's examine some of these operations to discover just how it is electricity helps.

Take a vacuum sweeper. It will clean a room in less time than it can be done with a broom, in the first place. In the second, it will be an easier job, for pushing a vacuum sweeper back and forth on its rubber-tired rollers is easier than wielding a broom. Then it will be a better job, for with an electric vacuum sweeper all dust and dirt are sucked up into an air-tight bag. With a broom this dust is all stirred into the air. Dusting must follow and taking it all around sweeping is an unpleasant job. Then take washday and compare the ordinary operation, where a washboard and hand wringer are used, with

Running water: One of the greatest hardships connected with the routine labor of the average farm home is that of getting the water for the daily household needs.

### No Water to Carry

Usually it is the housewife herself who carries most of the water for the house. The husband or children may help when they are about but usually they are away at work, school and so on. So the wife and mother it is who must frequently traipse out in the yard, regardless of health or weather, and carry the filled bucket back again.

How a modern electric water system will change all this. Picture the kitchen of the farmer's wife. There is a nice white enameled sink with the faucets with the water right at hand just at the twist of a faucet. Picture the modern bathroom, too, which the farm family can now enjoy, where the electric pressure water system is installed.

Washing, ironing, sweeping, running water, electricity cares for all these in a sane, practical, modern way. There is nothing mysterious about it. In the farm home, almost, can have electricity today, either from the neighborhood power station or, regardless of where it is located, from the little individual electric plants that many today are installing about their own premises.

Washing, ironing, cleaning, running water—and to round out the picture electric lights, perhaps the finest feature of all. For they save time and labor, too, and freedom from the nuisance of coal oil lamps and afford a setting in the farm home, restful, radiant light that ought to be the portion of every farmer's



# For Our Boys and Girls

## TANGLES

No. 36—Riddle:  
What was the name of the first apple?

## HIDDEN INSECTS

No. 37—  
Why are you running, Nat?

No. 38—  
James is flying his kite.

No. 39—  
Peggy can't go, because it is raining.

Answers to Tangles in May Issue

No. 32—  
No one knows (nose).

No. 33—  
Because he has no hat yet (hatchet).

No. 34—  
Because both need shingling.

No. 35—Four Word Squares

RAID  
AIDE  
IDLE  
DEEM

## ANABEL AND THE FAIRY

By Edith Lyle Ragsdale

(Concluded)

WHEN Anabel picked up the basket she found it to be a great deal lighter than it had been before, even with the fairy sitting on the edge, kicking her little red heels.

All along the way Fairy-Star-Heart kept up a continual chattering and the little girl was both surprised and pleased to see how rapidly she could go and soon they reached home.

"I will leave you here," the fairy told Anabel when the gate was reached. "I've got quite a good deal to do in the next few days. And don't you worry about that May-day festival," she called as she spread her wings and sailed off.

Anabel rushed into the house and told her mother all about the strange happening. "That was very wonderful," declared the lady. "I have lived 35 years and I have never in all that time met a really-truly fairy. I'd certainly like to meet your new friend."

Three days later the May festival was to be held. But Anabel, though she looked, never one time caught a glimpse of Fairy-Star-Heart.

The first of May, very early in the morning, Anabel awoke. The room was shining with a strange light and the most exquisite perfume floated about. The little girl nudged her mother, "Mumsie," she called, "Oh, Mumsie!" Sleepily the lady stretched, then as her eyes came open and she saw the wonderful light and caught the sweet scent, she sat up in bed. "What is it?" she asked.

But Anabel gave a great cry and jumped out on the floor. "Look!" she squealed. "Look, Look, LOOK!"

The mother of the little girl gave a scream. "Where did it come from?" she asked again. But Anabel didn't say a word. She just went up to the chair and with one finger touched the lovely frock lying there.

"Put it on," came a queer little voice. "It'll fit all right, for I had the most dressmaker of all the Elves measure you while you slept." Obediently the little girl slipped out of her nightgown, bathed her face and brushed out her curls, then slipped into the dress. It did fit to perfection. "Now the stockings and slippers," commanded the fairy.

When dressed Anabel looked at herself in the little cracked mirror and gasped. "It's the most beautiful thing I ever saw," she whispered. "Glad you like it," snapped the fairy (she was about to cry and, like a lot of people who do good deeds, but do not want to be thanked, acted cross to cover up her emotion). "I certainly had a time getting it. Why, I had to go clear to the moon to get the cloth—which is woven by the Moon Elves; I snatched a bit of clouded fleece for the trimming and then hunted about among the stars for little ones for buttons; when I got enough to button you up I then had to go to China, the land of flowers, for your wreath. Coming home I chanced upon the loveliest mist lying beside the river and I rolled up a bit for your sash. The slippers were made from a nugget of gold the King happened to have about and I saw to it that my personal cobbler did the job. The stockings I borrowed from a princess across the sea."

Anabel sighed rapturously. "The pearls," she said. "Where did you, oh, good Fairy-Star-Heart, find them?"

Star-Heart laughed. "I wondered if you would ask me that; that was the hardest job of all. For those I had to go clear to Ceylon, dive down, oh, the longest distance, and hunt about the very finest ones. One of the Water Elves assisted me or it might have been a more difficult undertaking. I could have gotten some nearer home, but while I was at it I wanted the best ever. But hasten, let your mother button you up."

Anabel stood up and the lady, with shaking fingers, buttoned the stars which held the shining moonbeam fabric, saw the pearls were in place, admired the silk stockings and the gold slippers and with a loving pat laid the wreath of snowy, Celestial flowers upon the brown curls.

"I knew you'd be a beauty with the proper clothing," applauded Star-Heart. "Now, I am going to tell you something: When the festival is over hurry home for the moonbeams won't last long. But the pearls are very valuable. When you are done with them, sell them and you and your mother will have plenty to live upon evermore. I have been watching you for a long time and as you were so good and obedient, and never fussed because you had to do without the good times other girls enjoyed, I determined to aid you."

Anabel turned from the mirror to thank the fairy, but she was gone. "Well, I do thank her, anyway," declared the little girl as she kissed her mother and started for the festival. Everywhere she passed people stopped to look at her and to inhale the delightful fragrance of the flowers. And the girl who boasted of the pink silk had to admit that Anabel's dress was the prettiest there. But nothing made Anabel hateful or proud and so when she was chosen Queen of the May she asked the girl in the pink silk to be her maid of honor.

So everybody was happy and Star-Heart, who sat in a half opened rose, opened and closed her wings very fast because she was so very glad.

Luigi Poligimino (whom no one suspects of being a Sinn Feiner), is reputed to have cleared up a fortune by selling whisky barrels to cider makers. Rochester, N. Y., has the honor of claiming Poligimino, who so cleverly put prohibition to use.



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Victor Talking Machine Co.

Camden, New Jersey



## SOAPSUDS FOR BORERS

By Henry Gardner, Indiana

I wish to tell you of an experience with a few peach trees several years ago. Having been afflicted by underground borers I had been in the habit of uncovering around the trunk down to the radiating roots and cutting out the grub, doing this every spring and fall and always finding a few.

An acquaintance advised me to throw the soapsuds from the household washing now and then around the roots near the trunk. I followed his advice, but continued to uncover as before two or three times at least, and finding no more grubs I have placed confidence in the practice, and now frequently apply the suds to other roots, also grapes, apples, etc. I look upon the remedy as very valuable, and suppose it is the lye of the soap that does the business. My garden is only 40x100 feet, so have but few trees.

Editor's Note:—Your applications of soapsuds will control the peach-tree borer very nicely if made often enough. The soapy water kills the young borers if it reaches them before they get too far into the bark. It is a good practice on a few trees. Try the new method described on another page in this issue.

Dr. W. A. Taylor of the Bureau of Plant Industry, has asked Congress for \$100,000 to conduct experiments to find other uses for wine grapes.

### A cool kitchen

Simply turn a valve and cook

**30 Days Trial**

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**AGENTS WANTED**

### Agents: \$50 a Week

For your spare time. Men or women selling guaranteed hosiery. Must wear 12 months or replaced free—all styles, colors and fancy stripes, including silk hose.

**Sell for Less Than Store Prices**

Often sell dozen pair to one family. Every man or woman, young or old, can make big money selling this quality line. Write for samples. **Thomas Hosiery Co.** 5105 Elk St. Dayton, Ohio





## It's a cinch to figure out why Camels sell.

Camels are unlike any cigarette you ever smoked—that's why they're a real cigarette revelation!

You should know why Camels are so unusual, so refreshing, so satisfying. *First*, quality—*second*, Camels expert blend of choice Turkish and choice Domestic tobaccos which you'll prefer to either kind smoked straight!

Camels blend makes possible that wonderful mellow mildness—yet all the desirable body is there! You'll appreciate, too, Camels freedom from any unpleasant cigarette aftertaste or unpleasant cigarette odor.

*Compare Camels puff-by-puff with any cigarette in the world at any price!*

# Camel

## CIGARETTES

Camels are sold everywhere in scientifically sealed packages of 20 cigarettes for 20 cents; or ten packages (200 cigarettes) in a glassine-paper-covered carton. We strongly recommend this carton for the home or office supply or when you travel.

R. J. REYNOLDS TOBACCO CO., Winston-Salem, N. C.

## Popular Arsenical Spraying Poisons

The four spraying poisons now in most common use for the control of chewing insects on fruits and vegetables are Paris green, arsenate of zinc, arsenate of lead and arsenate of calcium. All of these chemicals get their poisonous quality from the arsenic oxide which forms the base for each chemical combination. Arsenic oxide is highly poisonous to chewing insects but for spraying purposes cannot be used alone on account of the injury it produces to the foliage of the plants that are sprayed with it. But when this base, arsenic oxide, has been combined with some less active agent, such as copper, zinc, lead or calcium, much of the poisonous quality of the arsenic oxide is retained but the tendency to burn foliage is more or less reduced.

Paris green was the arsenical spray material that was first used in a large way. This is a chemical combination of arsenic oxide and copper, but because of its tendency to injure foliage it has dropped in favor. And since it is quite difficult to keep in suspension in the spray tank and does not possess very desirable adhesive properties it has gradually given way to arsenate of lead for fruit tree spraying. For potatoes, however, Paris green still is used in very large quantities, as potato foliage is quite resistant to its tendency to burn.

Of the other three arsenical spray materials, arsenate of lead is the most extensively used. It causes little or no injury to foliage, it stands up well in suspension, it sticks and spreads well on the foliage. But it is not as active a poison as Paris green and consequently does not kill so quickly.

There are two kinds of arsenate of lead. "In each one," says Prof. H. F. Wilson of the Wisconsin Experiment Station, "the arsenic forms a different combination with the lead so that in the one known as hydrogen acid, or diplumbic arsenate of lead, there are two parts of lead to one part of arsenic oxide forming a material with 33 per cent poison in it. The second form of arsenate of lead known as basic, neutral or triplumbic arsenate of lead, forms a combination in which one part of arsenic oxide is combined with three parts of lead and in which the poison amounts to 25 per cent of the total.

"The basic lead arsenate forms a more stable combination between the lead and the arsenic than does the lead hydrogen arsenate. For this reason it does not break down as rapidly in the presence of water or air and is the most desirable spray to use on tender plants in certain climates. However, this slow breaking down makes it an un-

## American Fruit Grower

desirable spray against those insects which are not quickly affected by poisons. "The lead hydrogen arsenate is easily broken down in contact with water or other chemicals and for this reason acts more quickly and has higher killing efficiency than the other form. But for this very reason it is somewhat more dangerous to use on the foliage of tender plants. The present methods of manufacture, however, such that the free arsenic in either one of the two forms is very small.

"The difference in the killing efficiency of these two forms probably accounts in a large measure for the unsatisfactory reports regarding the use of arsenate of lead to control the Colorado potato beetle. The basic arsenate of lead is slow in its action that very poor results are obtained when used against insects, but lead hydrogen arsenate in small amounts gives immediate and efficient results. It has been noted that insects that have fed on the basic lead arsenate do not die immediately, but of them become sick and do not live after having received a dose of poison."

## Breeding New Strawberries

(Continued from page 7.)

strawberries distinguished for unique flavor, indelible color and firmness equalled in berries. The new varieties are very robust, with long roots, and did plants with beautiful leaves in the sunshine, reflecting golden tints like picture that has been splashed with gold powder. Some with evergreen leaves and some with honey-scented berries that cure on the vines for raisins. One variety produces berries firm as cherries, that will not fall or turn soft when cooked for canning and the strange thing about it is that this one is made by crossing two hardy, white wild berries of no value. The variety does not produce large berries, but in the can they appear larger because they hold their form when cooked.

Mr. Etter has combined the wild beach berry and all the other wild varieties with well-known berries such as Dornan, Fendall and others, and remarkable progress has been made simply by crossing the wild varieties with each other.

**SAVE YOUR TREES**  
By Spraying With  
**GOOD'S CAUSTIC POTASH SOAP NO. 3**  
Will not poison or injure plants or animals.  
Our book on Tree and Shrub Diseases. Write for it FREE.  
ORIGINAL MAKER  
JAMES GOOD, 2111 E. Sacramento Ave., Portland, Ore.

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**WANTED—REAL ESTATE AGENTS** To help sell 3,000 acres orchard and pasture land; as a whole or subdivisions. W. C. Crone-meyer, Berkeley Springs, W. Va.

**WANTED—MEN—WOMEN, OVER 17.** Hundreds Railway Mail Clerks. \$1,600—\$2,300. Examinations everywhere July 14-August 11. Vacancy list free. Franklin Institute, Dept. W 141, Rochester, N. Y.

**WANTED—RELIABLE MAN TO ACT AS** district superintendent to book orders for fruit and ornamental trees, roses and shrubbery and engage sub-agents; exclusive territory; pay weekly. Apply at once. C. H. Weeks Nursery Co., Newark, New York State.

**BIG MONEY AND FAST SALES. EVERY** owner buys gold initials for his auto. You charge \$1.50, make \$1.35. Ten orders daily easy. Write for particulars and free samples. American Monogram Co., Dept. 92, Glen Ridge, N. J.

**RAILWAY TRAFFIC INSPECTORS EARN** from \$110 to \$200 per month and expenses. Travel if desired. Unlimited advancement. No age limit. We train you. Positions furnished under guarantee. Write for Booklet CM 84, Standard Business Training Institute, Buffalo, N. Y.

**AGENTS—TO TRAVEL BY AUTOMOBILE** introducing our big line of fast summer sellers. The greatest line on earth. Make \$10 a day easy. Complete outfit and automobile furnished to workers. Write at once for exclusive territory. American Products Co., 2167 American Bldg., Cincinnati, O.

### REAL ESTATE FOR SALE

**CALIFORNIA FARMS FOR SALE. WRITE** for list. E. R. Waite, Shawnee, Oklahoma.

**SHAWNEE OKLAHOMA CENTER OF A** great farming country. Write for free agricultural booklet. Board of Commerce, Shawnee, Oklahoma.

**WANTED—TO LEASE OR BUY, ORCHARD** in Missouri River section. Everett Smith, Salem, Neb.

**FREE FRUIT FARM LIST. FAMOUS MICHIGAN** fruit grower wishes to retire, offers his fine 154-acre farm at bargain. Zander Bros., "Fruit Farm Specialists," Milwaukee, Wis.

**VIRGINIA ORCHARDS AND FARMS IN** best fruit and farming sections. Prices very reasonable. Healthful climate and beautiful country. State wants and get descriptions. Wilder & Co., Charlottesville, Va.

**35 ACRE FRUIT FARM ON STATE ROAD,** 25 miles to Baltimore (nation's best market). All tillable; 22 acres in bearing apples. Beautiful home; all improvements; tenant house; outbuildings. Almost new. "A money maker just coming into money." (Selling to settle estate.) Address, Carroll Orchards, Westminster, Maryland.

**MANY KINDS FINE FARM LANDS FROM** which to select. Markets, climate, schools and roads good. State in first letter (1) crops and (2) livestock you want to raise; (3) acreage wanted; (4) improved or unimproved; (5) terms wanted. Descriptions can then be sent to suit you. Railroad-Farm Bureau, San Antonio, Texas.

**GOOD LAND ON CREDIT IN MICHIGAN'S** fruit belt. Get land for poultry, vegetables, fruit. Be independent. Rich hardwood land at \$15 to \$35 per acre in tracts of 10 to 160 acres. Near towns, schools, churches and markets. Good transportation. Illustrated booklet free on request. Swigart Land Company, 21266 First National Bank Bldg., Chicago, Ill.

**160 ACRES EXCEPTIONALLY FINE WILLA-** mette Valley, Oregon, apple orchard, for sale cheap. Reasonable terms. A. C. Bohmstedt, 401 Masonic Temple, Salem, Oregon.

**FARMS FOR SALE IN CENTRAL OHIO.** Coshocton & Knox Co. I have farms of all descriptions, prices, size and location. Write for catalog. C. F. Clark, Real Estate, Ricketts Bldg., Coshocton, Ohio.

**NEW YORK FRUIT FARMS. AMERICA'S** greatest bargains. Special announcement. During July and August, railroad fare to Buffalo paid to our farm purchasers. Come immediately. See fine growing crops. Western buyers making great profits here. Stock, tools, crops included. Wonderful opportunities. Immediate possession. Catalogue containing complete information free. Write immediately. Buffalo Farm Exchange, Buffalo, New York.

**FOR SALE—EXTENSIVE VIRGINIA COM-** mercial orchard. 1,400 acres; 270 planted; coming into heavy bearing. Winesaps main variety. 1910 crop sold for \$37,000. Trees young, fine condition, yields fast increasing. Fertile soil; tractors used cultivation, motor trucks hauling. Modern machinery packing house, barns, stock, attractive residence; 14 laborers' houses; fine distributing point, near railroads running north, south, east, west. Already paying handsomely; capable great expansion. Write "owner," care American Fruit Grower, Chicago.

**DO YOU WANT A FARM HOME IN A** country that has pleasant summers with cool, restful nights, mild winters, rich soil and where crops are assured? In Eastern Washington and Northern Idaho you will find these conditions, also good schools and churches, good roads, agreeable neighbors and farm lands that can still be bought at reasonable prices. You will find this a delightful country for your permanent home. Write for our free illustrated folder, "A Farm Home for You." Farm Development Bureau, 506 Chamber of Commerce Building, Spokane, Wash.

### PLANTS, TREES AND SEEDS

**NEW RACE STRAWBERRIES PREFERRED** for canning. Color, flavor, firmness of the wild in garden berries. Plants mailed, \$1 dozen. Wm. M. Freeman, New Meadows, Idaho.

### MISCELLANEOUS

**APPLE CROP—FOR SALE—WILL BE** apple crop from one thousand trees at 600 King David. Address, L. L. McGee, Geary, Oklahoma.

**ATTENTION—FRUIT AND POTATO** ers and shippers. For sizes, sorters, elevators, packing house supplies, write Price Manufacturing Co., Inc., Yakima, Washington.

**FOR SALE—TISSUE FRUIT WRAPS** Packed 20M to bundle. While they last to 10 bundles, each \$3; 11 to 20 bundles \$2.75; 21 bundles and upward, each \$2.50. Cash with order. Write for F.O.B. Roswell. Reference, First National Bank, well, N. M. E. W. Mitchell.

**ORANGEADE POWDER CONCENTRATE** All that you have to do is to add sugar water and it is ready to drink. Just drink for picnic, fairs, festivals and home. Sample to make one gallon, 10¢ delivered. W. Radcliffe & Co., Dept. 10, Wheeling, W. Va.

**FORDS RUN 34 MILES PER GALLON** on our 1920 carburetors. Use cheapest gas or half kerosene. Start easy any increased power. Styles for all motor slow in high gear. Attach yourself to profits for agents. Money back guarantee. 30-day trial. Air-Friction Carburetor Co., 294 Madison Ave., Dayton, Ohio.

### POULTRY AND LIVE STOCK

**DURO PIGS, \$30 PR., PED. & REG.** DeGraft, O.

**BABY CHICKS—PUREBRED, STRONG** heavy laying strains. Healthy, vigorous White Leghorns, \$17 per 100. Brown Leghorns, \$18 per 100. Buff Orpingtons, \$18 per 100. Red, Buff Orpingtons, \$18 per 100. Postpaid. Live arrival guaranteed. Hatchery in this section. Seven years of dealing and satisfied customers. Catalog Booth Hatchery, Clinton, Mo.



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## Why They Have Adopted This Spray Hose As Standard Equipment

There are several important reasons why thousands of fruit-growers have adopted Goodyear Monterey Spray Hose as standard equipment.

Goodyear Monterey Spray Hose withstands the rotting action of the strongest spraying solutions, because it is lined with a rubber tube, specially compounded for the service required.

It holds high and sudden pressures, for the tube is remarkably tough and resilient.

It can be dragged up and down the orchard

without developing leaks, as it has a cover designed to resist severe abrasion.

Indeed all parts of this standard spray hose, built to protect our good name, last a long time. They are all of the best material and workmanship.

If you are not yet a user of Goodyear Monterey Spray Hose go today to the Goodyear Mechanical Goods Service Station which will supply you with the size and ply best adapted to your particular requirements.

THE GOODYEAR TIRE & RUBBER COMPANY  
*Offices Throughout the World*

GOODYEAR  
SPRAY HOSE



# Barrett Everlastie Roofings



## Everlastie "Rubber" Roofing

A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade waterproofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions.

## Everlastie Slate-Surfaced Roofing

A high-grade roll roofing, surfaced with *genuine crushed slate*, in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage.

Combines real protection against fire with beauty. Nails and cement with each roll.



(4-Shingles-in-One)

## Everlastie Multi-Shingles

Made of high-grade, thoroughly waterproofed felt and surfaced with *crushed slate* in beautiful natural slate colors, either red or green. Laid in strips of *four shingles in one* at far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Need no painting.

## Everlastie Tylike Shingles

Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8 x 12 3/4 inches. Laid like wooden shingles but cost less per year of service. Need no painting.



## Good looks, low cost, long service—

A GOOD-LOOKING roof helps to make a good-looking building. But that's not the only point to think about. Some good-looking roofs are very disappointing when it comes to *wear*.

If you have a Barrett Everlastie Roof, you may be sure it will not only *look* well, but will give you *long* service.

Everlastie Roofings are made by one of the oldest and largest roofing manufacturers in the country. These roofings are backed by sixty-years of "know how."

Everlastie Roofings are suitable for every type of steep-roofed structure, from the most modest farm building to the finest residence.

All are easy to lay, very durable, and low in cost.

Illustrated booklet of each style, will be sent free on request.

## The Barrett Company

New York	Chicago	Philadelphia	Boston	St. Louis	Cleveland	Cincinnati
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THE BARRETT COMPANY, Limited.  
 Montreal Toronto Winnipeg Vancouver  
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The buildings in foreground show handsome effect obtained with the red Everlastie Multi or Tylike Shingles.

Illustration shows Everlastie "Rubber" Roofing on barn and silo.